HEALTH AND SAFETY PLAN
for
ASARCO TACOMA SMELTER SITE STABILIZATION ACTIVITIES

ASARCO, Incorporated

March 12, 1987

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by _____ (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date

I hereby certify that to the best of my knowledge this list is current for _____ (month/year).

_____
Contractor Site Health and Safety Officer

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1.0 INTRODUCTION

The facilities of the former ASARCO-Tacoma Copper Smelter have been designated as a National Priorities List Superfund site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA, effective October 17, 1986). Any hazardous waste sampling or cleanup activities associated with this site must be performed in accordance with an approved site-specific Health and Safety Plan designed to ensure that employees are adequately protected from the chemical and physical hazards present at the site. The plan must comply with the provisions of the OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (51 FR 45654, December 19, 1986) under 29 CFR Part 1910.

This sample Health and Safety Plan has been prepared as a guide intended to outline the basic issues which must be considered by employees of ASARCO, Inc. and its contractors who will perform the work described in Attachment A to the Administrative Order on Consent, Site Stabilization Plan, dated August 20, 1986, including any subsequent revisions or modifications required during implementation of site stabilization activities. Each contractor will be responsible for developing and adhering to specific health and safety procedures based upon the guidelines contained in this sample Health and Safety Plan which address the hazards associated with their specific responsibilities under the Site Stabilization Plan.

1.1 SITE VISITORS

Visitors invited to observe field activities will be required to comply with provisions of this plan. Visitors may only enter work zones at the discretion of the contractor's Site Health and Safety Officer. Visitors who enter work zones under other authority (e.g., for the purpose of regulatory inspections) must either comply with provisions of this Health and Safety Plan, including signing the Health and Safety Consent Form, or accept full responsibility for following the provisions of their independent Health and

Safety Plan. It is anticipated that USEPA and WISHA personnel will utilize health and safety procedures developed by their respective agencies for their site-specific activities.

1.2 HEALTH AND SAFETY PLAN SCOPE

This Health and Safety Plan includes:

- Discussion of known or anticipated hazards to personnel performing work within the scope of the Site Stabilization Plan
- Recommended safety precautions and standard operating procedures (SOPs) designed to minimize the possibility of harm to field personnel and visitors
- Emergency procedures to be followed in the event of accidents

All personnel involved with site stabilization activities will be required to read this Health and Safety Plan and sign a statement acknowledging that they understand the material contained in the Plan and agree to abide by its recommendations and requirements.

2.0 GENERAL PROJECT INFORMATION

The ASARCO Tacoma Smelter facility has served for the past century as a primary copper smelter with related metals processing activities. At times, the facility specialized in custom smelting of ores rich in arsenic. The arsenic was recovered and processed for commercial sale. As the result of the smelting and refining activities at this site, structures to be demolished may be contaminated with arsenic, cadmium, lead, and possibly other metals; asbestos and asbestos-containing construction materials; and general construction materials which may produce nuisance dusts upon demolition.

Figure 2-1 shows the general site layout, including the area where demolition activities are scheduled to take place. Figure 2-2 is a more detailed map of the demolition areas.

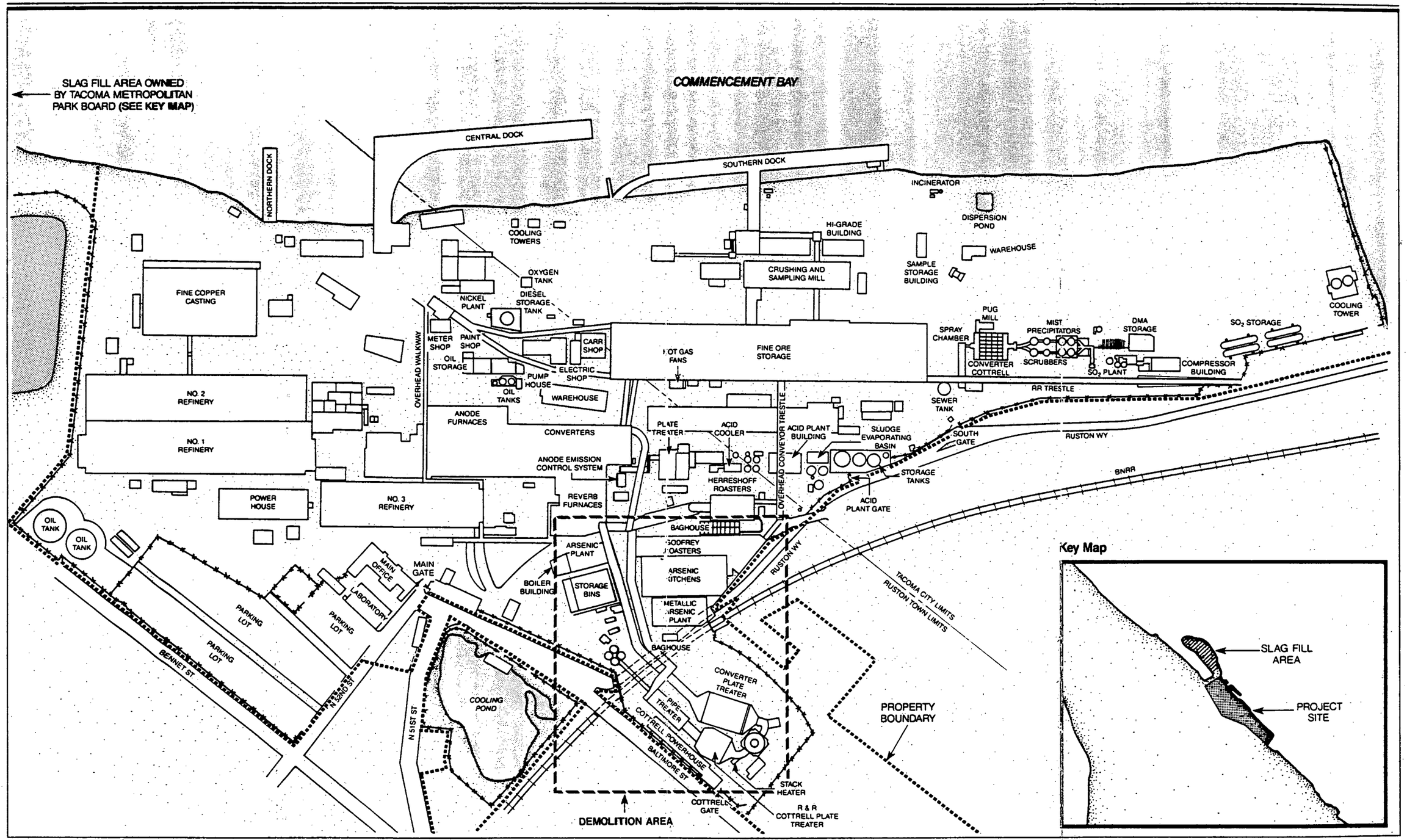


Figure 2-1.
ASARCO Tacoma Smelter Site General Layout

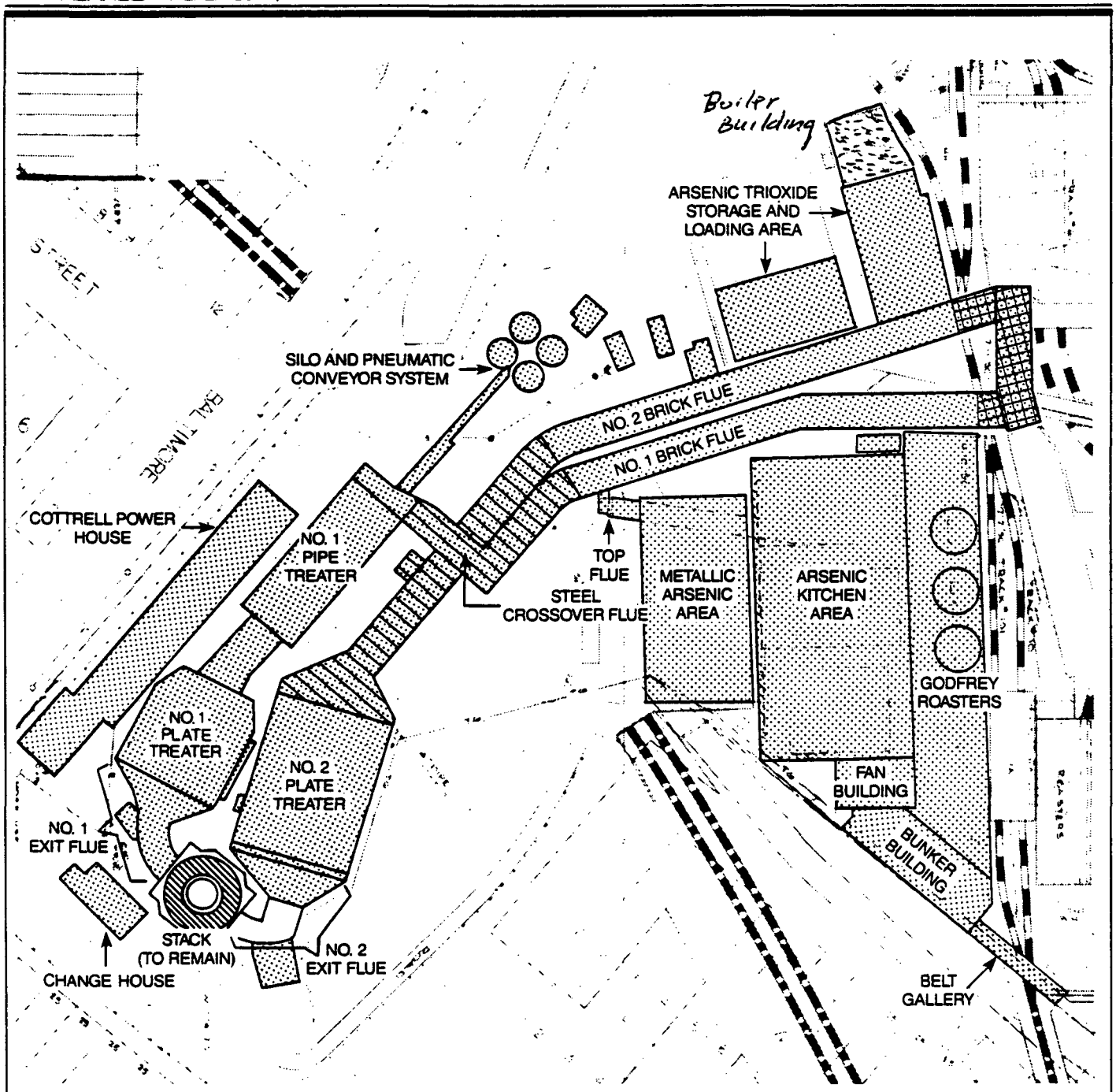


Figure 2-2.
ASARCO Tacoma Smelter Site
Detail of Demolition Areas

3.0 FIELD PERSONNEL QUALIFICATIONS

3.1 EMPLOYEE INFORMATION AND TRAINING

Each contractor has trained its own employees regarding hazards described in Section 6.0, with special emphasis on inhalation and skin contact with inorganic arsenic. Training shall also include use of personal protective equipment as outlined in Appendix C and decontamination procedures described in Appendix D. Each contractor has also reviewed the contents of this safety and health plan with each employee and shall document such training by completing the consent form included at the beginning of this plan.

3.2 MONITORING EQUIPMENT TRAINING

Each contractor will be responsible for obtaining consultant services or providing trained personnel to conduct monitoring for documenting the degree of exposure to specific contaminants experienced by their personnel. Trained personnel would be knowledgeable in the use of portable sampling pumps equipped with filter cassettes to sample for time-weighted average (TWA) exposures to airborne particulate contaminants as required by the WISHA inorganic arsenic standard (WAC 296-62-07347). Training in the use of upwind-downwind monitoring techniques must be included in the monitoring equipment training program where there is the potential for release of airborne contaminants including asbestos fibers.

3.3 FIRST AID TRAINING

Each contractor will be responsible for obtaining training for their own employees in first aid techniques. At least one member of each contractor team present on the site must hold current certification in first aid techniques, including cardiopulmonary resuscitation (CPR) training, equivalent to the 8-hour course administered by the American Red Cross. These employees are listed in Appendix G for each contractor.

3.4 ACCIDENT PREVENTION TRAINING

Each contractor will be responsible for developing and implementing an Accident Prevention Training Program which complies with the provisions of WAC 296-155 Section 110. The training program must be tailored to the Contractor's specific operations during site stabilization activities and must anticipate the types of accidents which might occur during those operations. The training program must include detailed explanation of written precautions and standard operating procedures designed to prevent accidents during site stabilization activities. Included as Appendix G is a description of each contractor's accident ~~precaution~~ prevention program and safety program.

4.0 PROJECT RESPONSIBILITIES

4.1 PROJECT HEALTH AND SAFETY OFFICER

The ASARCO Project Health and Safety Officer is responsible for the contents of, distribution of, and modifications to this Health and Safety Plan. The Project Health and Safety Officer's primary responsibilities consist of informing the Site Health and Safety Officer designated by each contractor of the hazards associated with the work to be performed by the contractor, and of the general types of safety precautions that may be necessary to protect against such hazards. Such training will include the general contents of this health and safety plan and specific information on arsenic included in Appendix H. The contractor health and safety officer will sign the form included in Appendix H documenting that he has received such information and agrees to abide by the provisions set forth in those Appendices.

The Project Health and Safety Officer will also serve as a central contact regarding health and safety issues encountered at the site. The designated ASARCO Project Health and Safety Officer for Site Stabilization activities is Mr. Curt Dungey (ASARCO, Inc.).

4.2 SITE HEALTH AND SAFETY OFFICER

Each contractor will be responsible for designating their own qualified Site Health and Safety Officer. Minimum qualifications for persons directly responsible for supervising employees engaged in hazardous waste operations are described in the OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (51 FR 45654, December 19, 1986). Because of the difficulties associated with meeting these training requirements, as an interim measure contractors will be required to submit the name of their designated Site Health and Safety Officer and that individual's current qualifications, including the following:

- Certifications
- Other specialized training
- Experience in performing work on-site at hazardous waste sites

The Site Health and Safety Officer is responsible for contractor-specific on-site decisions related to daily field operations. Specific duties will include the following:

- Recommends stopping work if any operation threatens worker or public health or safety
- Selects protective clothing and equipment
- Periodically inspects protective clothing and equipment
- Ensures that protective clothing and equipment are properly stored and maintained.
- Controls entry and exit at the Access Control Points
- Coordinates safety and health program activities with the Project Health and Safety Officer
- Confirms each team member's suitability for work based on a physician's recommendation
- Monitors the work parties for signs of stress, such as cold exposure, heat stress, and fatigue
- Monitors onsite hazards and conditions
- Participates in the preparation of and implements the Contractor Health and Safety Plan

- o Conducts periodic inspections to determine if the Contractor Health and Safety Plan is being followed

- o Knows emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department

- o Notifies, when necessary, local public emergency officials

- o Coordinates emergency medical care

The Site Health and Safety Officer will have the authority to select protective clothing and health and safety monitoring equipment based on the guidelines contained in this Health and Safety Plan or augment those plans as necessary and may stop their specific site work if any activity or condition threatens worker or public health or safety. The Site Health and Safety Officer will inform the Project Health and Safety Officer as soon as reasonably possible whenever there are questions regarding the safety of continued operations.

4.3 DECONTAMINATION STATION OFFICER

Each contractor will be responsible for designating their own qualified Decontamination Station Officer responsible for overseeing the decontamination of the contractor's personnel, equipment, and samples prior to their leaving the site. Each contractor's designated Decontamination Station Officer is listed in Appendix G. Specifically, the Decontamination Station Officer:

- o Is responsible for decontamination procedures, equipment, and supplies

- o Prepares procedures for emergency decontamination of contaminated accident victims

- Sets up decontamination lines and the decontamination solutions appropriate for the type of chemical contamination on site

- Controls the decontamination of all equipment, personnel, and samples from the contaminated areas

- Assists in the disposal of contaminated clothing and materials

- Ensures that all required equipment is available

- Advises medical personnel of potential exposures of victims and consequences

Mr. Curt Dungey of ASARCO, Inc., will serve as coordinator of decontamination activities.

Minimum qualifications for persons serving in the role of Decontamination Station Officer are described in the OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (51 FR 45654, December 19, 1986). Appendix D contains guidelines for the decontamination of personnel and vehicles which will be used by the Decontamination Station Officer in preparing a decontamination plan specific to the contractor's site stabilization activities.

5.0 REVISIONS AND ADDITIONS TO HEALTH AND SAFETY PLAN

All fieldwork will immediately cease in the event that unexpected hazards such as the following are encountered:

- Detection in the work zone of unexpected chemical or physical hazards approaching or exceeding established exposure limits or guidelines for such hazards

- Known or suspected malfunction of critical equipment (e.g., personal protection equipment, monitoring equipment, or other equipment affecting health and safety)

- Accidents of unknown cause (e.g., resulting in injury or equipment damage)

Fieldwork will not resume until the hazardous situation is corrected. At the discretion of the ASARCO Project Health and Safety Officer, all fieldwork may be suspended until a revised Health and Safety Plan has been prepared. The authority for cessation may rest with any party responsible for overseeing site stabilization activities. It is the responsibility of each and every on-site employee to ensure that any observation made of potentially hazardous situations is immediately communicated to their Site Health and Safety Officer or other person in a position to take direct action to mitigate the potentially hazardous situation.

Recommendations pertaining to personal protection equipment and/or monitoring protocols may be revised as new monitoring and analytical data become available.

6.0 HAZARD EVALUATION

6.1 SAFETY HAZARDS

Each contractor has provided written plans specific to its site stabilization activities describing safety precautions to be taken. These are described in Appendix G. Safety precautions may include demolition (in accordance with WAC 296-155 Section 775), fall protection (in accordance with WAC 296-155 Section 225), accident prevention (in accordance with WAC 296-155 Section 110), and other regulations that may apply.

6.2 CHEMICAL SUBSTANCES OF CONCERN

The following substances are known or suspected to be present on site. The primary hazards associated with each are identified.

Substance Involved	Primary Hazards
Arsenic	Toxic on inhalation, ingestion; skin irritant; known human carcinogen
Arsine gas	Toxic on inhalation; garlic odor detectable only above safe levels; suspected human carcinogen
Asbestos	Known human lung carcinogen; suspected carcinogen by ingestion
Cadmium	Toxic on inhalation, ingestion; suspected human carcinogen
Dimethylaniline	Toxic on inhalation, ingestion, skin contact
Lead	Toxic on inhalation, ingestion

A summary of the relevant standards and exposure guidelines for these substances is given in Appendix B.

6.3 RESPIRATORY HAZARDS

All of the substances listed in Section 6.2 may be harmful upon inhalation. The major anticipated respiratory hazards are related to inhalation of airborne particles potentially contaminated with arsenic, cadmium, lead, or other metals present as by-products of smelting and refining processes. The contaminant likely to be present in the largest concentrations is inorganic arsenic in the form of arsenic trioxide dust (As_2O_3). Asbestos fibers, arsine gas, and organic vapors may also be present onsite.

Highly toxic arsine gas may be formed by the reaction of compounds containing arsenic and acids, particulary when reducing agents such as aluminum, magnesium, or zinc are present. For this reason, contractors are urged not to allow use of materials containing these metals (e.g. zinc-coated galvanized steel equipment) where there is any possibility that they may contact arsenic-containing materials. Arsine gas rapidly causes hemolysis of red blood cells. Arsine poses a special hazard due to the narrow margin of safety between the detection limit achievable using length-of-stain detector tubes (i.e., approximately 0.01 ppm) and the Immediately Dangerous to Life and Health level (6 ppm). The characteristic garlic odor of arsine gas is detectable only above safe concentrations. **Use of air-purifying respirators is not approved for protection against inhalation of arsine.** Assuming the above precautions are followed, the generation of arsine gas is considered unlikely to occur.

During demolition activities, the potential exists for exposure to airborne asbestos fibers released from building insulation materials. Asbestos is a known human lung carcinogen (i.e., leads to pleural mesotheliomas and other lung cancers) and has been associated with a number of other serious respiratory illnesses (e.g., asbestosis).

Organic vapor hazards (e.g. dimethylaniline) are not likely to be present in areas designated for demolition.

6.4 CONTACT HAZARDS

Hazards include the potential for harmful skin contact and/or absorption of certain contaminants from soil, water, or air. Arsenic, in particular, is capable of causing localized skin irritation from contact or exposure to high levels in the air. Employees should be aware that arsenical dust on respirator facepieces can cause skin irritation on the face. Workers should avoid allowing the facepiece sealing surface from coming into contact with dirty work clothes.

6.5 THERMAL STRESS HAZARDS

Work activities may expose field personnel to excessively cold or warm temperatures. Use of impermeable protective garments may lead to heat exhaustion or heat stroke. Training on the hazards of heat-induced illness is appropriate for some work operations. Prolonged exposure to cold may lead to discomfort, numbness, reduced efficiency, or frostbite. As warm weather approaches, the possibility of heat-induced illness associated with use of personal protective equipment will be discussed during a periodic safety meeting.

7.0 WORK ZONE DEFINITION

In order to reduce the spread of contaminants from contaminated areas to clean areas, the site will be divided into work zones where specific operations will occur. The establishment of work zones will help ensure that: 1) personnel are properly protected against the hazards where they are working, 2) work activities and contamination are confined to the appropriate areas, and 3) personnel can be located and evacuated in an emergency.

For practical purposes, each work area may be divided into three functional types of work zones:

- **Exclusion Zone:** the contaminated area
- **Contamination Reduction Zone (CRZ):** area where decontamination activities take place
- **Support Zone:** non-contaminated area where workers and support crew should not be exposed to hazardous conditions.

Contaminated areas where site stabilization activities are not currently scheduled to take place shall be marked off and/or cleaned up in the same fashion as other areas designated as Exclusion Zones. These "non-work areas" must be treated in the same fashion as active Exclusion Zones, and site stabilization personnel are prohibited from entering these areas without direction from the Site Health and Safety Officer on appropriate levels of protection and specified operating procedures for entering these areas.

The various work zones for site stabilization activities are defined on Figure 7-1. Locations for general decontamination are shown on Figure 7-2.

Procedures for handing site emergency incidents, either on-site or off-site, including spills, fires, or other emergency conditions, are outlined in the OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations

(51 FR 45654, December 19, 1986). For this particular site, the procedures for handling emergencies on-site and off-site are outlined in Section 10.0 of this plan.

All incidents of spills or other on-site or off-site emergencies shall be immediately reported to the Site Safety Officer, who is responsible for communicating the circumstances of the emergency to the Project Health and Safety Officer and the USEPA On-Site Coordinator. The Project Health and Safety Officer (or any other capable person) shall be responsible for notifying the disaster, fire and/or emergency response contacts of the appropriate local, state, and federal agencies of the location, nature, and extent of the emergency situation.

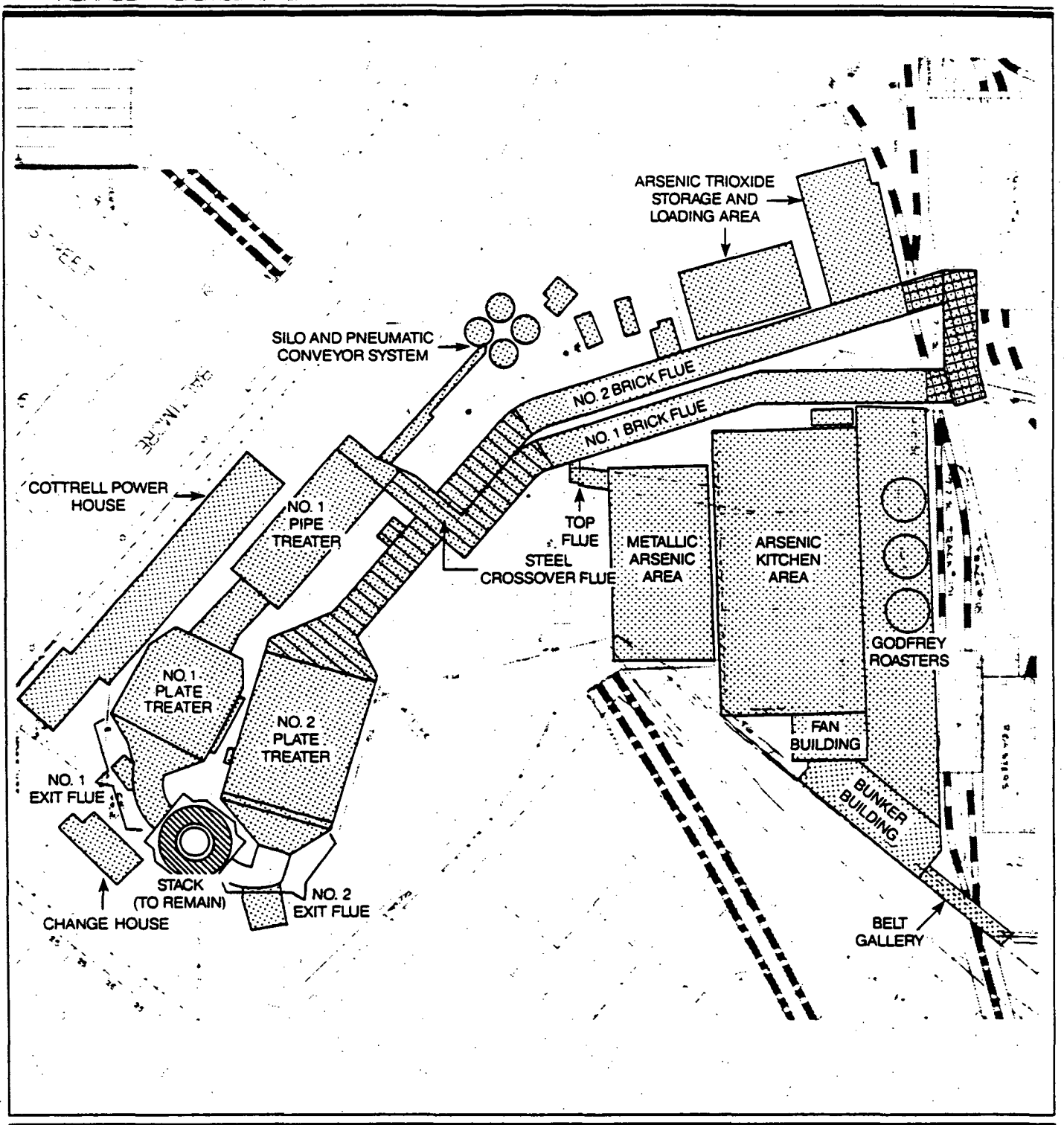


Figure 7-1.
Exclusion Zone Area

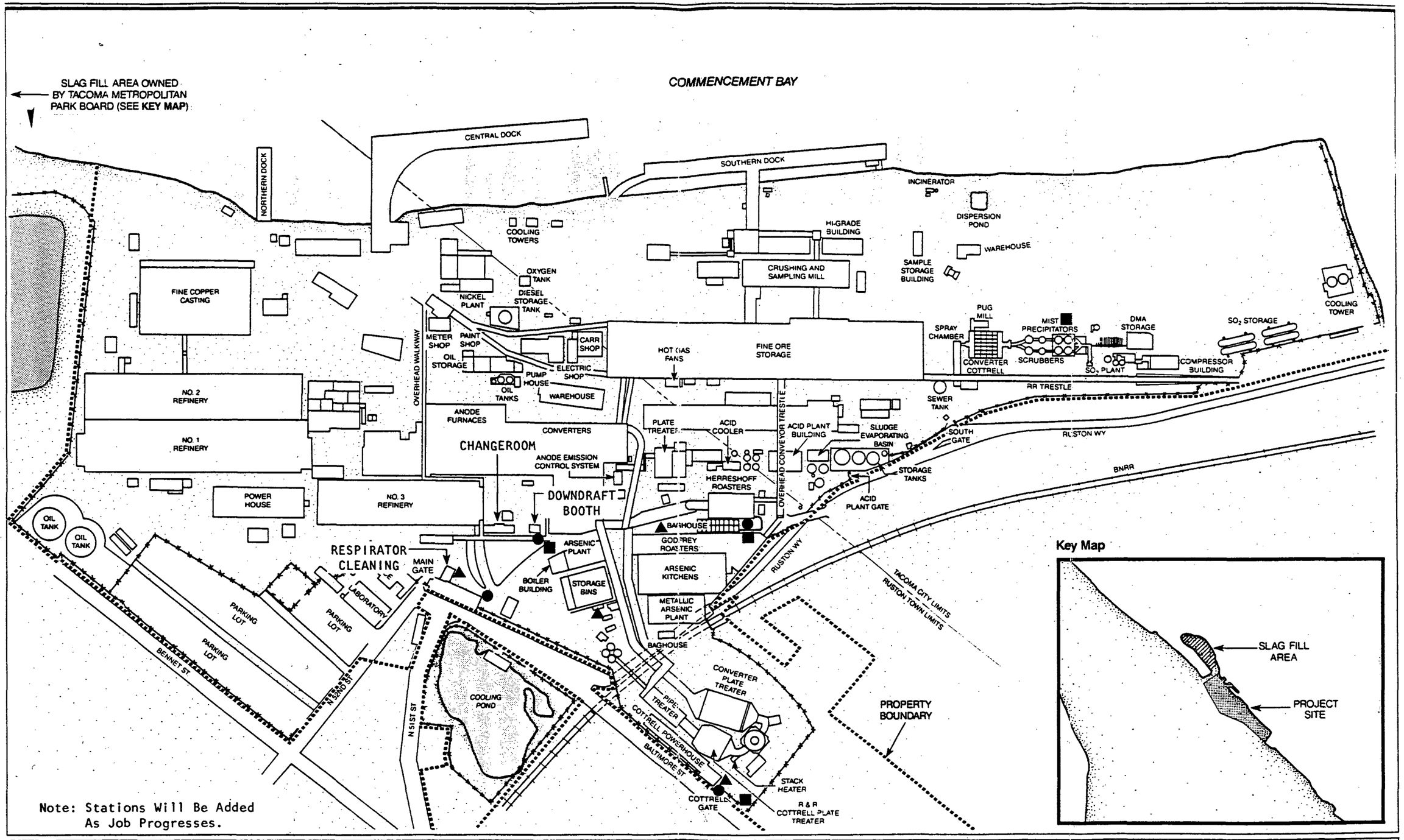


Figure 7-2.
Decontamination Facilities

8.0 SAFETY EQUIPMENT

8.1 PERSONAL PROTECTION EQUIPMENT

8.1.1 Introduction

Protective clothing shall be used whenever there is the possibility of exposure to chemical or physical hazards onsite. Monitoring equipment will be used to assess the adequacy of the personal protection equipment chosen, and should be useful in estimating potential exposures of personnel.

8.1.2 Fit-Testing Program

Employees will not be permitted to work in environments requiring respirators until they have undergone qualitative fit-testing by a qualified individual (including challenge with irritant smoke) provided by the contractor to their employees to ensure the proper functioning of their equipment (see fit-testing protocol in new Federal OSHA asbestos standard, 29 CFR 1910.1001, Appendix C). The designated individual for conducting fit-testing is listed in each contractor's health and safety requirements in Appendix G. Facial hair which prevents proper facepiece seal must be shaven. Standard eyeglasses may not be worn with full-facepiece respirators. Use of contact lenses with a full facepiece respirator is prohibited by law (29 CFR Part 1910.134[e][5][ii]). Each contractor will ensure that personnel requiring vision correction will be supplied with prescription ground lenses to be used with a spectacle kit designed by the respirator manufacturer to fit inside the respirator facepiece while maintaining the integrity of the facepiece-to-face seal.

8.1.3 Selection of Levels of Protection

The Project Health and Safety Officer will be responsible for recommending personal protective equipment for various field activities and site conditions, based on a review of known and suspected contaminants and their

toxicologic or other hazardous properties. Each Contractor's Site Health and Safety Officer will be responsible for onsite decisions regarding daily field activities, including selection of personal protection equipment in accordance with Section 9.2.2 and Appendix C.

Based on an initial evaluation of known potential hazards on site, the following levels of personal protection are required for particular site stabilization activities:

General Site Activity	Recommended Minimum Level of Protection
Vacuuming wet or dry material; water washdown of buildings or other structures	Modified level C; full facepiece recommended for protection against extremely dusty conditions; options for upgrade to powered air purifying respirator
Operators of powered equipment; operators of dust suppressions hoses; general demolition	Modified level C; half-mask recommended; options for upgrade to full facepiece
Support Activities outside of work zones	Level D; splash gear if appropriate

It should be noted that several of the compounds known or suspected to be present on the site (i.e., arsenic, arsine, asbestos, cadmium) are known or potential human carcinogens. Exposure to these substances will be kept to the minimum level practicable.

8.2 MONITORING EQUIPMENT

8.2.1 Monitoring Responsibilities

Each contractor will be responsible for evaluating and monitoring their work area to determine potential exposures of their personnel to surface and

airborne contaminants. It is expected that the primary concern for most activities will be exposures to dusts containing arsenic and/or asbestos, and that particulate sampling devices will be necessary to establish levels of airborne contaminants in the breathing zone of site stabilization personnel.

At the onset of demolition or other activities, each contractor will obtain personal monitor air samples from at least two members of the crew on two separate shifts to characterize worker exposure to arsenic or other metals during a particular job function. If concentrations of any measured parameter is above applicable WISHA standards, appropriate respiratory protection will be required as outlined in Appendix B. At least one personal monitor and one upwind/downwind sample for asbestos will be collected to assess potential asbestos exposure during demolition of brick structures with tar coating. Other asbestos monitoring will be conducted as outlined in the asbestos contractor's specific plan in Appendix G.

8.2.2. Portable Sampling Pump with Filter Cassette

Arsenic and asbestos sampling will be conducted in accordance with the most recent WISHA standards. Results of personal monitoring will be submitted to EPA on a weekly basis.

A standard industrial hygiene personal sampling pump with Millipore-type filter cassette will be worn by selected field personnel exposed to airborne particulates potentially containing toxic metals as discussed in 8.2.1. The filter cassettes will be sent to an analytical laboratory for determination of Time Weighted Average (TWA) concentrations of inorganic arsenic. It is assumed that arsenic concentrations will be much greater than concentrations of other metals (e.g., cadmium, lead) and therefore may serve as an acceptable indicator of general levels of contamination. If preliminary results indicate high concentrations of arsenic, at the discretion of the Contractor Site Health and Safety Officer additional contaminants may be sampled using this methodology.

If the results of the Sampling and Analysis activities performed under the Remedial Investigation indicate significant concentrations of other contaminants, the Project Health and Safety Officer may recommend the use of additional monitoring equipment to ensure adequate protection of contractor personnel from exposure to these hazards.

8.3 SAFETY EQUIPMENT

Each Site Health and Safety Officer shall have a copy of Figure 7-2 showing the locations of safety equipment including, but not limited to, first aid kits, portable fire extinguishers and emergency eye wash stations. Maps will also be posted at several locations on-site.

8.3.1 First Aid Kits

First aid kits meeting WISHA requirements are conveniently located such that field personnel will have ready access to them during field activities.

8.3.2 Portable Fire Extinguishers

Portable fire extinguishers meeting WISHA requirements are conveniently located such that field personnel will have ready access to them during field activities.

8.3.3 Emergency Eye Wash Station

Portable emergency eye-wash stations meeting WISHA requirements are conveniently located such that field personnel will have ready access to them during field activities. The stations must provide a minimum of 15 minutes of continuous flushing capacity (in accordance with NIOSH first aid guidelines for arsenic). The stations will be supplied with clean tap water changed daily and will be maintained full at all times. Employees without ready access to the above-mentioned station will be provided with personal size bottles containing a minimum of four ounces of sterile phosphate

buffering solution at pH 6.9 (e.g., Bullard Model No. 70-54) to be carried on the person at all times as temporary first aid until flushing for a minimum of 15 minutes may be accomplished.

9.0 GENERAL SAFETY PROCEDURES

9.1 MEDICAL SURVEILLANCE/BIOLOGICAL MONITORING

Each contractor has established a medical surveillance program which complies with WISHA regulations and guidelines for the specific activities being performed under the Site Stabilization Plan. Each contractor will also be responsible for selecting the specific medical surveillance program elements and biological monitoring parameters which will serve to verify that their employees have been adequately protected from identified site hazards.

Each contractor's baseline physical examination is included in Appendix G.

At the discretion of the contractor Site Health and Safety Officer, employees exposed to potentially high levels of hazard may be re-examined or required to undergo additional testing on a case-by-case basis.

9.2 STANDARD OPERATING PROCEDURES

9.2.1 Site Control

When appropriate, the Site Health and Safety Officer will clearly delineate the various work zones using signs, labels, fluorescent tape, or traffic cones, as warranted by site conditions and planned activities. Unauthorized personnel will be prevented from entering the exclusion zone and contamination reduction zone.

9.2.2 Required Action Levels Based on Monitoring

The following are actions required to be taken as the result of the specified monitoring observations:

Monitoring Parameter	Observed Level	Required Action
Arsenic, inorganic (as As)	Greater than 5 ug/m^3 but less than 10 ug/m^3 (8-hr TWA)	Respirators advised, but not required; additional air monitoring required under WAC 296-62-07347
	Greater than 10 ug/m^3 but not greater than 100 ug/m^3 (8-hr TWA)	Half-mask air-purifying respirator equipped with high-efficiency ("HEPA") filter or any half-mask supplied air respirator required
	Not greater than 500 ug/m^3 (8-hr TWA)	Full facepiece air-purifying respirator equipped with high-efficiency ("HEPA") filter or any full facepiece supplied air respirator or any full facepiece self-contained breathing apparatus required
	Not greater than 1,000 ug/m^3 (1 mg/m^3) 8-hr TWA	Powered air-purifying respirators in all inlet face coverings with high-efficiency ("HEPA") filters or full-face supplied air respirators operated in positive pressure mode required
	Not greater than 10,000 ug/m^3 (10 mg/m^3) 8-hr TWA	Full-face supplied air respirators operated in positive pressure mode required
Arsine	Detectable at levels greater than 0.01 ppm	Withdraw immediately; no entry except rescue using Level B (SCBA)

Monitoring Parameter	Observed Level	Required Action
Asbestos	Greater than 0.1 fiber/cc	Action based on quantitative protection factor of respirator and discretion of Project Health and Safety Officer in accordance with WAC 296-62-07517 and proposed revision, WAC 296-26-077 but in all cases to include at least use of an appropriate air-purifying respirator equipped with high-efficiency ("HEPA") filter approved by NIOSH for use against dusts, fumes and mists having a TWA less than 0.05 mg/m^3 and asbestos-containing dusts and mists and radionuclides
Lead, inorganic fumes and dusts, as Pb	Not in excess of 0.5 mg/m^3	Half-mask, air purifying respirator equipped with high efficiency ("HEPA") filters required
	Not in excess of 2.5 mg/m^3	Full facepiece, air purifying respirator equipped with high efficiency ("HEPA") filters required

9.2.3 Notification of Local Emergency Response Personnel

The Project Health and Safety Officer has notified, in writing, the local fire department, local hospitals, local emergency medical clinics, and city traffic control personnel regarding the nature of the work to be performed at the site and the time frame in which the work is to be accomplished. The fire department will be provided with information necessary for preparation of procedures which allow emergency response while minimizing the spread of

contaminants. Hospitals and medical clinics will be provided with information on the chemical substances at the site such that procedures for appropriate emergency medical treatment may be prepared and such that procedures for emergency decontamination of contaminated victims may be prepared. City traffic control personnel will be provided with information regarding conditions potentially requiring emergency closure of local roadways or the tunnel near the ASARCO property.

9.3 COMMUNICATION PROCEDURES

Due to the complexity of site stabilization activities and the number of employees of various contractors who will be present on the site, communications procedures have been established to ensure the smooth flow of operations and rapid response to emergency situations.

ASARCO, Inc. will maintain a radio communication system which will be used by its employees.

Each contractor shall coordinate communication channels with ASARCO, Inc. such that emergency communications may be readily maintained by walkie-talkie, telephone, or other means. It is anticipated that contractors will each operate on a unique walkie-talkie frequency so as not to interfere with the communications of other contractors. Where appropriate, Mr. Curtis Dungey of ASARCO, Inc. will be provided with a means of communicating directly with a contact person responsible for the daily activities of a given contractor (e.g. a walkie-talkie or paging device).

9.4 DECONTAMINATION PROCEDURES

Personnel, vehicles, and other equipment leaving the Exclusion Zone will be thoroughly decontaminated using a modified level C decontamination protocol. The primary concern will be the removal of dusts and liquids contaminated with arsenic and other metals. Particular care should be taken to avoid skin contact with contaminated materials. Decontamination equipment and stations to be used are detailed in Appendix D.

Contractors involved in the removal and disposal of asbestos will follow standardized, approved methods for decontamination separate and distinct from the methods described above. Asbestos-removal contractors will not share decontamination facilities with other site-stabilization contractors until they have gone through their own primary decontamination. This procedure is described in Appendix G.

10.0 EMERGENCY PROCEDURES

10.1 GENERAL PROCEDURES

All emergencies will be immediately reported by phone using 911.

In the event of an emergency, the Contractor Site Health and Safety Officer will immediately arrange for first aid to victims, if necessary, and will summon assistance as soon as the situation permits. Emergency routes to local medical facilities are given in Appendix F.

10.2 NOTIFICATION

In the event of any emergency not limited to a minor first aid case, the Contractor Site Health and Safety Officer will immediately notify any or all of the appropriate contacts listed in the Appendix. Medical treatment should be coordinated through the contacts at the Contractor's occupational health clinic whenever possible, due to their familiarity with the contractor's medical surveillance program and with the nature of the potential exposures. The contractor's occupational health clinic will be provided with a copy of this Health and Safety Plan by the contractor and any pertinent revisions or supplementary information required will also be forwarded. For most of the contractors, this clinic is First Care Medicenter.

10.3 DOCUMENTATION

Any incident involving injury, illness, or other emergency will require documentation of the incident in a follow-up report.

APPENDICES

A. EXAMPLE BASELINE MEDICAL MONITORING EXAMINATION

B. OCCUPATIONAL STANDARDS AND EXPOSURE GUIDELINES FOR CONTAMINANTS OF CONCERN

C. GUIDELINES FOR PERSONAL PROTECTIVE EQUIPMENT FOR VARIOUS LEVELS OF PROTECTION

D. GUIDELINES FOR DECONTAMINATION OF PERSONNEL AND VEHICLES

E. EMERGENCY NOTIFICATION CONTACTS/PHONE NUMBERS

F. EMERGENCY ROUTES TO HOSPITAL

G. CONTRACTOR - SUBMITTED PLANS

H. INFORMATION AND TRAINING TO CONTRACTOR

APPENDIX A

EXAMPLE BASELINE MEDICAL MONITORING EXAMINATION

Suggested evaluations for all employees selected to participate in the overall corporate medical surveillance program:

A. History and Physical Examination (including):
   1) Medical and Occupational History, including smoking history
   2) Vision testing using Titmus instrumentation
   3) Blood pressure, pulse rate, oral temperature
   4) Height and weight
   5) Physician-administered physical exam, including nasal and skin exam per arsenic standard requirements (WAC 296-62-07347)

B. Audiometric hearing evaluation

C. Chest x-ray; minimum of single view, 14" by 17" posterior-anterior, with interpretation (performed on initial exam and then every other year, unless otherwise clinically indicated)

D. Urinalysis with microscopic exam

E. Complete blood count (CBC with differential)

F. Blood chemistry profile (including):
   (creatinine, glucose, calcium, phosphorus, GGT, GOT, BUN, alkaline phosphatase, cholesterol, HDL/cholesterol ratio, triglyceride, total protein, albumin, total bilirubin)

G. Pulmonary function test

H. Electrocardiogram; 12-lead with interpretation

Supplementary tests for specified employees:

I. Blood lead test

J. 24-hr urine test for arsenic

APPENDIX B

OCCUPATIONAL STANDARDS AND EXPOSURE GUIDELINES FOR CONTAMINANTS OF CONCERN

Relevant standards and exposure guidelines:

- Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs)
- National Institute for Occupational Safety and Health (NIOSH) Immediate Danger to Life and Health (IDLH) guidelines
- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs)
- State of Washington Department of Labor Permissible Exposure Limits and other applicable regulations

TABLE B.1

ASARCO TACOMA SMELTER SITE STABILIZATION PLAN
OCCUPATIONAL STANDARDS AND EXPOSURE GUIDELINES FOR CONTAMINANTS OF CONCERN

CAS #	SUBSTANCE	OSHA PEL	ACGIH TLV	NIOSH IDLH LEVEL	WA STATE DEPT. OF LABOR
7740-38-2	Arsenic and compounds (as As)	10 µg/m3 8-hr TWA	0.2 mg/m3 (200 µg/m3) TLV-TWA	Ca	10 µg/m3 8-hr TWA WAC 296-62-07347
7784-42-1	Arsine	0.05 ppm (0.2 mg/m3; 200 µg/m3) 8-hr TWA	0.05 ppm (0.2 mg/m3) TLV-TWA	Ca 6 ppm	0.05 ppm (0.2 mg/m3) 8-hr TWA WAC 296-62-07515
1332-21-4	Asbestos	< 0.2 fibers/cc longer than 5 micrometers (8-hr TWA) < 1.0 fibers/cc longer than 5 micrometers (ceiling)	< 0.2 to 2 fibers/cc, depending on mineral type Designated Human Carcinogen Type A1a	Ca	< 0.2 fibers/cc longer than 5 micrometers (8-hr TWA) < 1.0 fibers/cc longer than 5 micrometers (ceiling) WAC 296-62-07517; revisions to be released under WAC 296-62-077

TABLE B.1 (continued)

ASARCO TACOMA SMELTER SITE STABILIZATION PLAN
OCCUPATIONAL STANDARDS AND EXPOSURE GUIDELINES FOR CONTAMINANTS OF CONCERN

CAS #	SUBSTANCE	OSHA PEL	ACGIH TLV	NIOSH IDLH LEVEL	WA STATE DEPT. OF LABOR
7440-43-9	Cadmium dust (as Cd)	0.2 mg/m3 8-hr TWA 0.6 mg/m3 ceiling	0.05 mg/m3 TLV-TWA	Ca 40 mg/m3	0.05 mg/m3 8-hr TWA WAC 296-62-07515
121-69-7	Dimethylaniline, N,N-	5 ppm (25 mg/m3) 8-hr TWA	5 ppm (25 mg/m3) TLV-TWA 10 ppm (50 mg/m3) TLV-STEL SKIN designation	100 ppm	5 ppm (25 mg/m3) 8-hr TWA WAC 296-62-07515 SKIN designation

TABLE B.1 (continued)

ASARCO TACOMA SMELTER SITE STABILIZATION PLAN
OCCUPATIONAL STANDARDS AND EXPOSURE GUIDELINES FOR CONTAMINANTS OF CONCERN

CAS #	SUBSTANCE	OSHA PEL	ACGIH TLV	NIOSH IDLH LEVEL	WA STATE DEPT. OF LABOR
7439-92-1	Lead, inorganic fumes and dusts (as Pb)	0.05 mg/m3 8-hr TWA	0.15 mg/m3 TLV-TWA	Variable	50 µg/m3 (0.05 mg/m3) 8-hr TWA WAC 296-26-07521

NOTES:

CAS #: Chemical Abstracts Service registry number for substance
OSHA PEL: Occupational Safety and Health Administration, Permissible Exposure Limit
NIOSH: National Institute of Occupational Safety and Health
ACGIH TLV: American Conference of Governmental Industrial Hygienists, Threshold Limit Value
IDLH: Immediately Dangerous to Life and Health
TWA: Time-Weighted Average (generally 8-hr)
STEL: Short-Term Exposure Limit (15-min TWA)
Ca: NIOSH has recommended that this substance be treated as a potential human carcinogen
SKIN Designation: indicates potential for significant absorption of substance through skin contact

APPENDIX C

GUIDELINES FOR PERSONAL PROTECTIVE EQUIPMENT FOR VARIOUS LEVELS OF PROTECTION

MODIFIED LEVEL C PROTECTION

Personal Protection Equipment

- Air-purifying respirator (currently NIOSH/MSHA-approved under 30 CFR Part 11) with high efficiency ("HEPA"-type) particulate filters approved for protection against dusts, fumes, and mists having a TWA less than 0.05 mg/m^3; and asbestos-containing dusts and mists; and radionuclides.

  Options:

  - half-mask facepiece (low to moderate dust levels)
  - full-facepiece (high dust levels)
  - powered air-purifying respirator (extremely high dust levels)
  - canister-type ("gas mask"; not recommended for this site)

- Chemical resistant clothing (optional)

- Coveralls (disposable or freshly laundered daily)

- Long cotton underwear (optional)

- Outer work gloves

- Liner gloves (optional)

- Rubber or neoprene work boots, chemical resistant, steel toe and shank

- Boot covers, disposable outer protection (optional)

- Hard hat (face shield may be required by WISHA for certain demolition activities)

- 2-way walkie-talkie (optional)

LEVEL D PROTECTION

Level D protection is primarily a work uniform. It can be worn only in areas where there is no possibility of contact with contamination.

Personal Protection Equipment

- Coveralls
- Gloves (optional)
- Boots/shoes, leather or chemical-resistant, steel toe and shank
- Safety glasses or chemical splash goggles (optional)
- Hard hat (face shield) (optional)

APPENDIX D

GUIDELINES FOR DECONTAMINATION OF PERSONNEL AND VEHICLES

Decontamination guidelines:

- o Modified Level C Decontamination of Personnel
- o Decontamination of Vehicles

MODIFIED LEVEL C DECONTAMINATION OF PERSONNEL

A. EQUIPMENT WORN

The modified decontamination procedure outlined is for workers wearing modified Level C protection consisting of:

- o Disposable dustproof suit or reusable work coveralls
- o Air-purifying respirator
- o Hard hat
- o Waterproof rubber or neoprene boots with steel toe and steel shank
- o Gloves

B. DECONTAMINATION PROCEDURES (EXCLUDING ASBESTOS-REMOVAL CONTRACTORS)

Note: Asbestos-removal contractors will follow a set of specially-designed decontamination procedures for asbestos-removal operations, and will not share decontamination facilities with other site-stabilization contractors until they have gone through their own primary decontamination. This procedure is described in Appendix G.

Segregated Equipment Drop

Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths or in different containers with plastic liners. Each will be contaminated to a different degree. Segregation at the drop reduces the probability of cross-contamination.

Boot Wash

A system of wash tubs will be used to remove contaminants from rubber or neoprene work boots.

- o First tub: plain tap water rinse. Use scrub brush to remove gross contamination from boot soles and surfaces.

- o Second tub: tap water wash. Use scrub brush to remove all visible traces of dirt, dust, or other contamination.

Wastewater from boot washing and rinsing will be discharged to the wastewater treatment system; contaminants will be collected and disposed of in accordance with USEPA guidelines. Locations for boot wash facilities are indicated on Figure 7-2.

Protective Work Clothing

With respirator still donned, enter ASARCO's down-draft chamber and turn on air nozzles to remove contaminants while shaking clothing to loosen dust and debris. Prior to entry, the worker should press the button outside the chamber, which activates the light and downdraft fan, to exhaust contaminants from the booth. Respirator may not be removed until cycle is completed. Contractor employees are responsible for cleaning and maintenance of respirators. This procedure must be followed prior to entering lunchrooms or change rooms for workers exposed to airborne levels of arsenic above 100 ug/m^3. If plastic or rubber raingear is worn, visible contamination shall be rinsed prior to changeroom facility entry.

Hygiene Practices

Eating, drinking, chewing gum or tobacco, smoking, or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any area where the possibility of contamination exists (e.g., exclusion zone, contamination reduction zone).

Changeroom and Shower Facilities

Upon completion of decontamination procedures, employees will enter the changeroom facility shown on Figure 7-2. Workers will enter the dirty clothes side only for removal of work clothing. Disposable clothing shall be disposed in a waste container, while reusable coveralls shall be placed in a special receptacle for laundering. The above procedure shall be followed after each day's shift. Individuals and laundry facilities conducting washing of reusable coverall have been warned regarding the possibility of arsenic and other metals being present on the clothing.

After removal of work clothing, employees shall enter the shower area and shower thoroughly with soap and water to remove contaminants on skin and hair. Employees will then enter the street clothes side of the changeroom facility to towel dry and don street clothing stored in this area.

Respirator Cleaning and Maintenance

Used respirators shall be dropped off at the ASARCO respirator cleaning facility for daily cleaning and maintenance. Respirator bodies shall be cleaned in hot, soapy water in an ultrasonic unit, rinsed, disinfected, and rinsed once again prior to drying. Cartridges are replaced on request by employees and when the worker experiences difficulty in breathing. Cleaned respirators are picked up prior to the beginning of each shift.

DECONTAMINATION OF VEHICLES

Prior to leaving the contamination reduction zone, vehicles in contact with contaminated dusts and debris will be washed with tap water. The water may contain detergents if necessary to remove contaminants.

Where existing drains are being used for collection of contaminated wastewater generated by dust-suppression activities, vehicles will be cleaned near these drains and the rinse water allowed to enter the wastewater treatment system. Where drains do not exist, decontamination pads will be constructed such that the contaminated rinse waters will be collected and either diverted to wastewater collection drains or drummed and transported to the wastewater treatment system.

APPENDIX E

EMERGENCY NOTIFICATION CONTACTS AND PHONE NUMBERS

EMERGENCY CONTACTS - POST

General emergency number: 911 (Fire, ambulance, police)

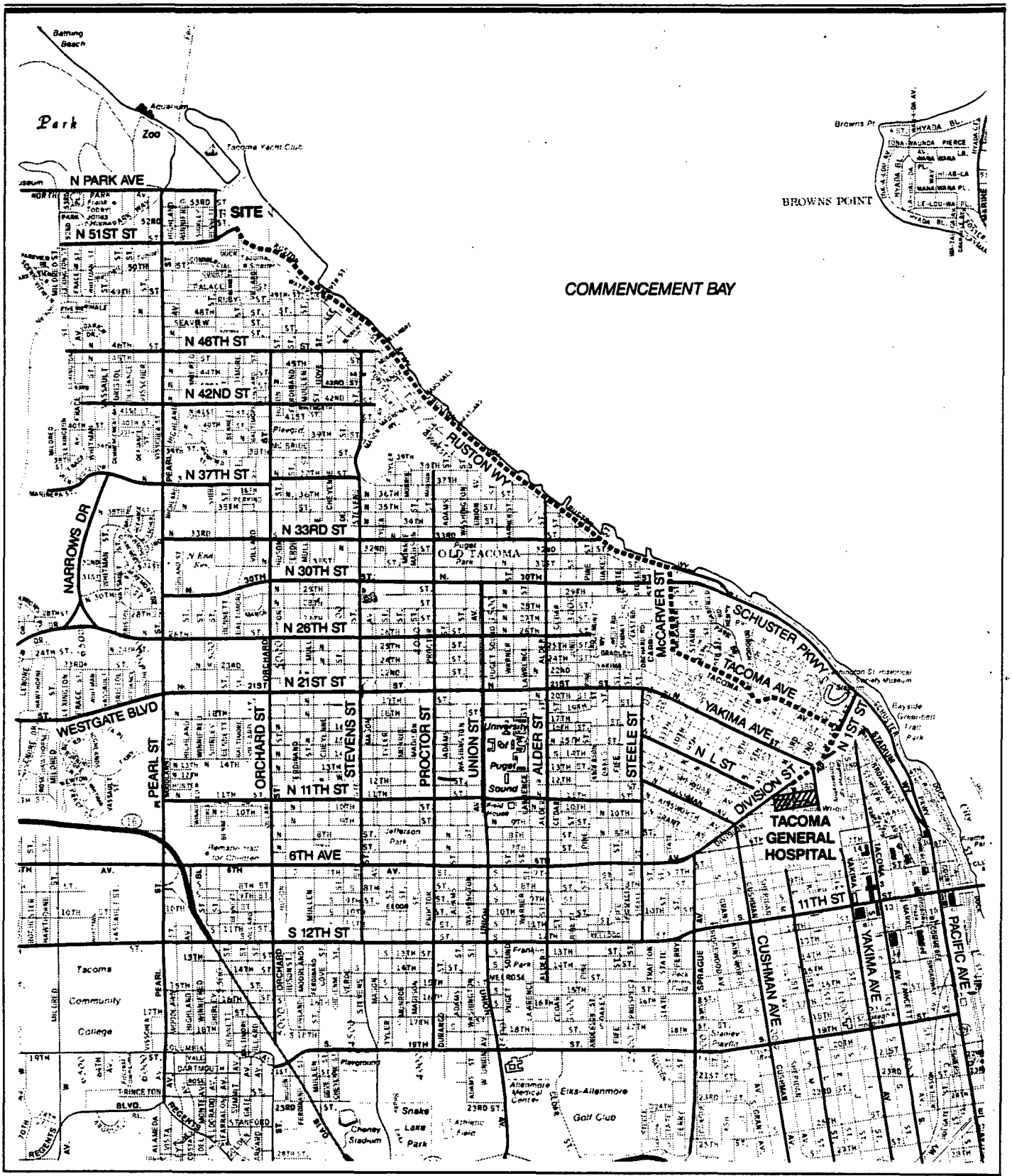
ASARCO, Inc. Project Health and Safety Officer Curtis Dungey	(office) 756-0278
Tacoma General Hospital 315 South K Street	(emergency) 594-1050 (general) 594-1000
Poison Control Center	526-2121
Contractors' occupational health clinics	_____
	_____
	_____
	_____
	_____
First Care Clinic N. 26th and Pearl Street	759-6655

APPENDIX F

EMERGENCY ROUTES TO HOSPITAL

Curt Dungey to provide the following:

- Written directions describing in detail the most expedient route to
  - Tacoma General Hospital
  - First Care Clinic
  - any other appropriate emergency medical facilities
- Indications (on map) of the locations of the First Care Clinic or other appropriate emergency medical facilities



SCALE IN FEET

0 2,000 4,000

N

Figure F-1.
Route to Hospital

APPENDIX G

CONTRACTOR - SUBMITTED PLANS

APPENDIX H

INFORMATION AND TRAINING TO CONTRACTOR

Arsenic Trioxide

A. Health Hazards

1) Inhalation - irritate lungs, upper respiratory tract, perforated nasal septum. Studies show risk to lung cancer higher with long term exposure. Systemic poisoning: weight loss, nausea, diarrhea, weakness, loss of appetite.

2) Ingestion - severe irritation to lining of stomach.

3) Contact - severe irritation to skin and eyes - discuss protective measures.

B. WISHA Standard

1) PEL - 10 ug/m^3 AL = 5 ug/m^3

2) Personal Hygiene - no eating, drinking, smoking in work area or prior to washing

3) Changeroom/shower facilities

4) Lunchroom areas

5) Respirators - levels of protection required by standard

6) Medical exams - required if exposed more than 30 days per year

7) Clothing and equipment - coveralls, gloves, boots, respirators

8) Exclusion Zones and Regulated Areas

TACOMA PLANT

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals

Contractor Signature

ASARCO Signature

ASARCO

Lawrence W. Lindquist
Manager

March 26, 1987

Dr. Roger Simms
First Care Medical Center
5702 N. 26th Street
Tacoma, WA 98406

Dear Dr. Simms:

The U. S. Environmental Protection Agency (EPA) and Asarco, Inc. have negotiated an Administrative Order on Consent under Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund). As part of this consent order, Asarco has agreed to conduct site stabilization and remedial investigation/feasibility study activities at the Tacoma Plant site. This consent order resulted from EPA's concerns about arsenic and heavy metals contamination detected at the facility. One requirement of the consent order is that a health and safety plan be prepared for the site. The plan requires, in part, that local emergency response personnel be notified regarding the nature of work to be performed at the site and the time frame in which the work is to be accomplished.

Such that your facility will be adequately prepared in event emergency medical treatment is necessary for employees on site, you should be aware that workers may come into contact with materials containing arsenic, lead and/or cadmium. This information will allow you to be prepared in event an emergency should occur.

Site stabilization activities at the plant will involve the demolition of various facilities that were associated with copper smelting and the production of arsenic trioxide and metallic arsenic. These activities will include the containment and/or removal of contaminated soils, surface water and debris. The site stabilization program will also include demolition of the brick flues, arsenic plant, and miscellaneous structures on the site.

The purpose of the remedial investigation (RI) is to determine the nature and extent of contamination on-site and its potential impact on human health and the environment. The RI will include characterization of wastes, groundwater, surface water, soils, air quality, aquatic resources, and slag leaching, as well as receptor identification. The RI will be followed by a feasibility study to evaluate alternatives to prevent and/or mitigate potential impacts from the contamination found on the site.

Asarco has hired Invirex Demolition, Inc. to carry out demolition activities. It is anticipated this project will be completed by the end of 1987. Asarco has also retained Parametrix, Inc. to conduct the RI/FS in accordance with guidelines provided by EPA. This project will be completed over the next two years.

If you have any questions regarding the above, you may contact me at (206) 756-0278.

Very truly yours,

Curtis E. Dungey

Curtis E. Dungey
Senior Environmental Scientist

CED:kj

ASARCO

Lawrence W. Lindquist
Manager

March 26, 1987

Mr. Ron Larkin
Fire Marshal
Tacoma Fire Department
901 South Fawcett
Tacoma, WA 98402

Dear Mr. Larkin:

The U. S. Environmental Protection Agency (EPA) and Asarco, Inc. have negotiated an Administrative Order on Consent under Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund). As part of this consent order, Asarco has agreed to conduct site stabilization and remedial investigation/feasibility study activities at the Tacoma Plant site. This consent order resulted from EPA's concerns about arsenic and heavy metals contamination detected at the facility. One requirement of the consent order is that a health and safety plan be prepared for the site. The plan requires, in part, that local emergency response personnel be notified regarding the nature of work to be performed at the site and the time frame in which the work is to be accomplished. This information will allow you to be prepared in event an emergency should occur.

Site stabilization activities at the plant will involve the demolition of various facilities that were associated with copper smelting and the production of arsenic trioxide and metallic arsenic. These activities will include the containment and/or removal of contaminated soils, surface water and debris. The site stabilization program will also include demolition of the brick flues, arsenic plant, and miscellaneous structures on the site.

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If you have any questions regarding the above, you may contact me at (206) 756-0278.

Very truly yours,

Curtis E. Dungey

Curtis E. Dungey
Senior Environmental Scientist

CED:kj

ASARCO

Lawrence W. Lindquist
Manager

March 26, 1987

Mr. Nick Thoennes
Associate Administrator
Tacoma General Hospital
315 South K Street
Tacoma, WA 98405

Dear Mr. Thoennes:

The U. S. Environmental Protection Agency (EPA) and Asarco, Inc. have negotiated an Administrative Order on Consent under Section 106 of the Comprehensive Environmental Response Compensation, and Liability Act of 1980 (Superfund). As part of this consent order, Asarco has agreed to conduct site stabilization and remedial investigation/feasibility study activities at the Tacoma Plant site. This consent order resulted from EPA's concerns about arsenic and heavy metals contamination detected at the facility. One requirement of the consent order is that a health and safety plan be prepared for the site. The plan requires, in part, that local emergency response personnel be notified regarding the nature of work to be performed at the site and the time frame in which the work is to be accomplished.

Such that your facility will be adequately prepared in event emergency medical treatment is necessary for employees on site, you should be aware that workers may come into contact with materials containing arsenic, lead and/or cadmium. This information will allow you to be prepared in event an emergency should occur.

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If you have any questions regarding the above, you may contact me at (206) 756-0278.

Very truly yours,

Curtis E. Dungey

Curtis E. Dungey
Senior Environmental Scientist

CED:kj

ASARCO Incorporated P.O. Box 1677 Tacoma, Wa 98401 (206) 756-0225

ASARCO

Lawrence W. Lindquist
Manager

March 26, 1987

Mr. Bill Pugh
Director of Traffic Engineering
City of Tacoma
Public Works Department
Traffic Engineering Division
747 Market Street, Suite 308
Tacoma, WA 98402

Dear Mr. Pugh:

The U. S. Environmental Protection Agency (EPA) and Asarco, Inc. have negotiated an Administrative Order on Consent under Section 106 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Superfund). As part of this consent order, Asarco has agreed to conduct site stabilization and remedial investigation/feasibility study activities at the Tacoma Plant site. This consent order resulted from EPA's concerns about arsenic and heavy metals contamination detected at the facility. One requirement of the consent order is that a health and safety plan be prepared for the site. The plan requires, in part, that local emergency response personnel be notified regarding the nature of work to be performed at the site and the time frame in which the work is to be accomplished. This information will allow you to be prepared in event an emergency should occur.

Site stabilization activities at the plant will involve the demolition of various facilities that were associated with copper smelting and the production of arsenic trioxide and metallic arsenic. These activities will include the containment and/or removal of contaminated soils, surface water and debris. The site stabilization program will also include demolition of the brick flues, arsenic plant, and miscellaneous structures on the site. In carrying out these activities, trucks will be engaged in hauling demolition debris and wastes off-site to appropriate disposal facilities. In event a spill should occur, emergency closure of roadways near the Asarco property may be necessary.

The purpose of the remedial investigation (RI) is to determine the nature and extent of contamination on-site and its potential impact on human health and the environment. The RI will include characterization of wastes, groundwater, surface water, soils, air quality, aquatic resources, and slag leaching, as well as receptor identification. The RI will be followed by a feasibility study to evaluate alternatives to prevent and/or mitigate potential impacts from the contamination found on the site.

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If you have any questions regarding the above, you may contact me at (206) 756-0278.

Very truly yours,

Curtis E. Dungey

Curtis E. Dungey
Senior Environmental Scientist

CED:kj

INVIREX DEMOLITION, INC.

HEALTH AND SAFETY PLAN

FOR ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

Asarco's Health and Safety Plan will be followed for general information. The following covers particular operations that Invirex workers are involved in and are not addressed in Asarco's Health and Safety Plan.

ACCIDENT PREVENTION

Invirex has an ongoing accident prevention program that has been established for six years. It consists of communication between the home office and project engineer, project engineer and supervisors-foremen, supervisors-foremen and workers. We feel that good communication between Invirex salary people and local workers is the key to a safe demolition job for Invirex and workers.

To accomplish this, we employ employee safety orientation and education, self-inspection, accident investigation and record-keeping.

Employee safety orientation and education begins with an employee's first day of work and continues throughout his employment. Our official safety reference is the "Demolition Safety Manual" written by the National Association of Demolition Contractors, plus any Federal and State codes, safety standards, rules, regulations and ordinances governing any and all phases of demolition. Much of employee education comes from workers who have been on demolition job sites for many years and have seen and experienced many jobs. That is why we feel communication among all workers is so important.

Self inspection is performed in the field and in the office. As hazardous conditions are found, they are corrected. These conditions and any other safety concerns are discussed among workers, foremen, supervisors and project engineers at the weekly safety meeting. The meeting is conducted in an open type atmosphere where attendance is mandatory and problems and suggestions are welcomed. Each meeting is documented with the "Weekly Safety Meeting" sheet (see attached example). A copy stays on the job site and a copy is sent to our home office in New York. This is part of our record keeping procedure.

Once an accident has occurred, all Company personnel are required to put in writing what they saw and how it could have been avoided. Again, a copy is kept on site, and one is sent to our home office.

WEEKLY SAFETY MEETING

FOR THE CONSTRUCTION INDUSTRY

Safety Meeting Outlines Box 294 Park Forest, IL 60466 312-481-6930 No. 8 Vol. 10 Week of Feb. 23, 1987

Company Name Inserra Demolition Job Name #192, Asarco, Tacoma Date 2-20-87

BACK INJURIES

Caution -- don't let the difficulty of your job become a pain in the back.

If you have already been a victim of back injury, you learned the hard way that it's very painful and costly -- but you're not alone.

Serious back disorders are so common that they now affect 75 million Americans and cost American industry over one billion dollars annually, for which we all eventually pay.

If you have never had any back problems be grateful, but learn all you can about back injury prevention, because 2 out of every 3 Americans will eventually suffer from back disorders.

Most back injuries occur while lifting and carrying, while others are due to poor sitting posture, falls, twisting, and being hit with foreign objects.

Since lifting ranks high on the injury list, learn to do it right -- start each lift with your brain -- THINK FIRST -- start with a good secure footing, keep your back straight (nearly vertical), with your chin tucked in -- now get a good grip with both hands, and with your body weight directly over your feet, lift the object with your legs.

If you bend at the waist and pick up 70 pounds, you will exert over 1000 pounds of force on your lower back.

The muscles that surround your back bone provide strength; weak back muscles contribute to 80% of all back injuries. Strong back and stomach muscles should be maintained through proper daily back exercises as recommended by your doctor.

SAFETY REMINDERS THOSE WHO HAVE INJURED THEIR BACK ONCE ARE FIVE TIMES MORE LIKELY TO REINJURE IT!

Special Topics For Your Project Importance of tight fit on respirators. Making sure safety line is tied off if working over 15' off ground.

Employee Safety Recommendations _____

Meeting Attended By

Ed Jennings
Pat Lindsey
Jay Schuelle
Peter Stabile
Clarence Williamson
George Hodges
John Wickenhauser
Frankie Burrell
Jeff Jennings
Chris Sullivan
Danny Dawson
Dieter Herforth
Charles Jones
Richard Case
Tommy Brown

Supervisors Signature Ed Jennings

PERSONAL SAFETY EQUIPMENT

All personnel are issued and required to wear the following:

General Laborer:

Hard hat, safety glasses, gloves, rubber steel-toed boots, coveralls, respirators,* appropriate filters (MSA type "H" for protection against dust, fumes, mists, asbestos-containing dust and mist and radionuclides, or MSA, GMC-H type for protection against organic and formaldehyde vapors and dust, fumes, mists, asbestos-containing dust and mist and radionuclides), raingear

Burner: (Propane and Oxygen Torch)

Same as general laborer plus full face respirator with MSA, GMC-H type filters for protection against organic and formaldehyde vapors and dust, fumes, mists, asbestos-containing dust and mist and radionuclides, and tinted full face shield

Employees Working Above 10 Feet:

Same as general laborer or burner plus safety belt, lanyards

Building Washer:

Same as general laborer plus full face respirator, raingear, waterproof hood with shoulder flaps

Operator:

Same as general laborer

* See Section 9.2.2 of Health and Safety Plan for ASARCO TACOMA SMELTER SITE STABILIZATION ACTIVITIES for the appropriate respirator protection required.

GENERAL SAFETY PROCEDURES

All demolition related work will be done in accordance with WAC 296-155-775 through 296-155-830, and Federal and State codes, safety standards, rules, regulations and ordinances governing any and all phases of demolition. Also, the "Demolition Safety Manual" written by the National Association of Demolition Contractors (NADC) will be followed.

Below are some of the more hazardous operations that we will be required to perform on the job site. Following each operation is a short description of the procedures that will be utilized to safely perform the job and/or the WISHA regulations that will be followed.

Torch Cutting

This requires the use of a propane-oxygen hand torch to cut steel. The safety procedures are lengthy, thus procedures will be referenced.

-WAC 296-155-900, 905, 907, 910, 915, 920
-Chapter 9, NADC Demolition Safety Manual

Building Washing

Before any building demolition can occur, accumulated arsenic will be washed off of structures where feasible. All washing will begin as close to the roof of a building as possible and work on down so that overhead spraying and splashing is minimized. To help accomplish this, workers will position themselves above the area to be washed and spray down wherever possible. The areas underwhich are in the process of washing will be isolated with rope or barrier tape to control access of unprotected workers. All wash water is contained in the buildings and diverted to ASARCO's contaminated water evaporation system via conveyors, PVC pipe and concrete trenches.

Work Above 10 Feet

A portion of the activity on site will require working above 10 feet. Whenever this has to be done, WAC 296-155-225 and Section 5.8 of NADC Demolition Safety Manual will be followed. Basically, these call for safety belts to be worn and secured to a lifeline or a safe rigid portion of the structure. For more detail, refer to above mentioned articles.

Work Involving Heavy Equipment

To limit worker exposure to arsenic, mechanical means of demolition will be utilized whenever possible. There are many safety precautions that must be followed when working around heavy equipment or the worker risk could be more harmful than the possible arsenic exposure. Our operators, foremen and superintendents have all worked around equipment for years. With their working knowledge, the use of WAC 296-155-Part L and Chapter 7 of the NADC Demolition Safety Manual, there will be no problems. Any workers involved in such work will be tightly supervised by Invirex Company people.

Dust Suppression

An important concept of our plan for any demolition will involve the suppression of generated dust. Even though the buildings have been washed, when demolition begins, dust will be generated. Also, when any demolition involves brick or concrete structures, there is a greater likelihood of dust generation.

Water will be used to suppress this dust. A fogging spray and/or a direct stream of water will be directed at the area or point of demolition throughout the entire process. Men working the hose will try to position themselves such that they are upwind of the demolition and can cover the affected area. In some cases, this will not be feasible and the worker may have to be downwind. Whether up or downwind, he will be required to wear respirator protection and the proper protective clothing.

All water shall be contained and diverted to ASARCO's contaminated water evaporation system.

Safety Enhancement

First aid kits and eye wash stations are located at various locations on the job site (see attached map).

A hand wash basin and safety glass cleaner will be located at the first aid station by the Cottrell building.

Key field personnel carry two-way radios and can contact our office via the base station located in the receptionist's room in the event of an emergency.

CRITICAL FIELD PERSONNEL

Jay Schwall: Site Health and Safety Officer
Invirex Project Engineer
B.S. Civil Engineer - Polytechnic Institute of New York
6 years field experience as Laborer, Foreman and Project Engineer
Most recent demolition jobs: Project Engineer at Monsanto's Delaware River Plant in Bridgeport, New Jersey, and Project Engineer at Pennwalt Plant in Wyandotte, Michigan.
Have worked with chlorine, caustic, asbestos, PCB's, diatherm, HCL.

Ed Jennings: Superintendent (See Attachment)

Arthur Stabile: Decontamination Station Officer
Carpenter, Foreman, 10 years demolition experience, asbestos removal, preparation work, PCB transformer containment and handling. Built the truck and boot washer currently used on site.

Gill Wickenhauser: Assistant Site Health and Safety Officer
8 hour American Red Cross First Aid Course
Issues all safety gear (respirators, filters, coveralls, rain gear, boots, safety belts, etc.). Cleans and maintains all respirators, performs respirator fit tests in accordance with OSHA, Appendix C to 1910.1001 - Qualitative and Quantitative Fit Testing Procedures.

Clarence Williamson: Superintendent Foreman
Has 32 years experience in demolition of various industrial and chemical job sites, including the following Chlorine Hydrogen Plant, Exxon Oil Refinery, Tetra Ethel Lead Plant, Polyethelene Furnaces, numerous paper plants and powerhouses, highrise alterations and demolition.

Danny Dawson: Served in U. S. Army
Attended 2 First Aid Courses, including C.P.R.

John Wickenhauser: Attended 8 hour American Red Cross First Aid Course

Charles Jones: (b)(6) in U. S. Army, now in Reserves
First Aid Training

Forest E. Jennings

(b) (6)

Ironworker

Employed in the building of the Throgsneck Bridge in New York.
Attended Brooklyn Tech nights, taking course in structural steel.

American Bridge
Worked as Journeyman Ironworker on Verrazano Narrows Bridge
in New York.

Superintendent for Wrecking Corporation of America

Superintendent for G. C. O'Brien, Inc.
Projects included 22-story high rise in New York
Salvage of 22,000 ton ocean liner in the West Indies

Superintendent for Cuyahoga Wrecking, Inc.
Projects included PPG Gas Plant in Barberton, Ohio
27,000 ton U. S. Steel Plant in Duluth, Minnesota
McDonnell Douglas Aircraft in Santa Monica, California

Superintendent for Shula, Inc.
$4,000,000 project at the Rheingold & Shaeffer Breweries
in New York

Superintendent for Invirex Demolition, Inc.
Projects included Alcoa Aluminum in Knoxville, Tennessee
PPG Plant, Corpus Christi, Texas, and Lake Charles, Louisiana
GMC Plant, Atlanta, Georgia
Dupont Plant, Orange, Texas
Consulting job for O. H. Materials at Chevron in Richmond,
California, which was an arsenic plant.

MARCH 1987

INVIREX DEMOLITION EMPLOYEES

Ed Jennings
Pat Lindsay
Jay Schwall
Karen Jennings
Arthur Stabile
Clarence Williamson
George Hodges
John Wickenhauser
Frankie Herrell
Gillian Wickenhauser
Jeff Jennings
Bryan Sullivan
Timmy Brown
Danny Dawson
Dieter Herforth
Richard Cass
Donald Curbow
Charles Jones

DEMOLITION BUILDING SURVEY
(Covers Invirex and Invirex' Sub-Contractors' Employees Only)

Building Name: _____

Location: _____

Age: _____

Type of Structure: _____

_____

Materials of Construction: _____

_____

Utilities: _____

_____

Structural Hazards: _____

_____

Possible Hazardous Materials: _____

_____

Steps Taken to Minimize Worker and Environmental Exposure: _____

_____

_____

If Asbestos, When Asbestos Removal Started: _____

Finished: _____

Methods of Demolition: _____

_____

_____

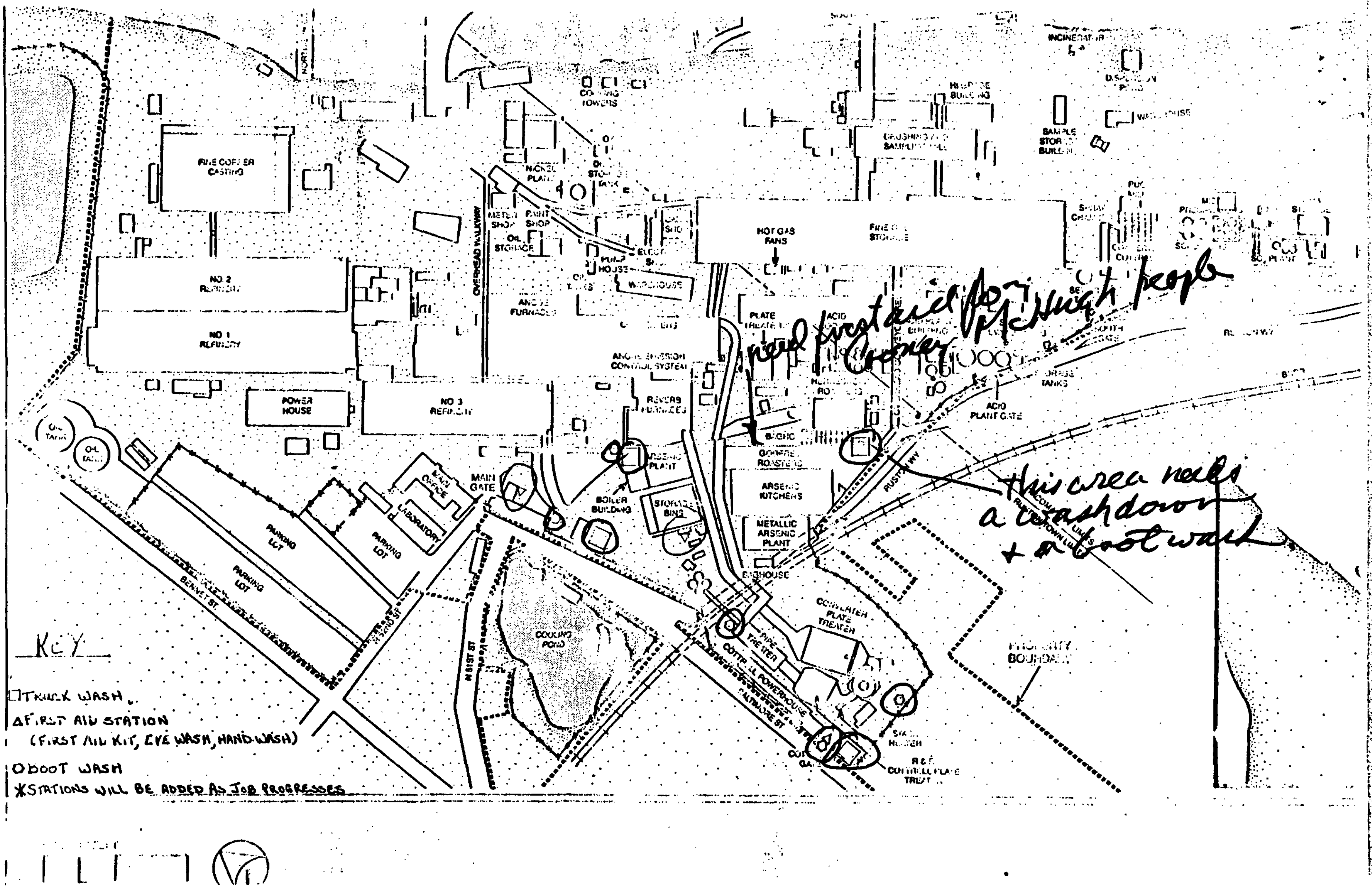
Special Safety Considerations: _____

_____

Other Comments: _____

_____

Signed: _____


FINE COPPER CASTING
NO 2 REFINERY
NO 1 REFINERY
POWER HOUSE
NO 3 REFINERY
OVERHEAD RAILWAY
NICKEL PLANT
METER SHOP
PAINT SHOP
OIL STORAGE
PUMP HOUSE
WAREHOUSE
ANODE FURNACES
ANODE EMISSION CONTROL SYSTEM
REVERB FURNACES
HOT GAS FANS
FINE ORE STORAGE
PLATE TREATER
ACID PLANT GATE
SAMPLE STORAGE BUILDING
INCINERATOR
COOLING TOWERS
MAIN GATE
MAIN OFFICE
LABORATORY
BOILER BUILDING
STORAGE BINS
ARSENIC PLANT
ARSENIC KITCHENS
METALLIC ARSENIC PLANT
BAGHOUSE
CONVERTER PLATE TREATER
COTTRELL POWERHOUSE
PIPE TREATER
COOLING POND
PARKING LOT
BENNET ST
N 51ST ST
BALTIMORE ST
RUSTON WY
PROPERTY BOUNDARY
STORAGE TANKS
OIL TANK
R & F COTTRELL PLATE TREAT
need first aid for Cooney McHugh people
this area needs a washdown + a boot wash
KEY
☐ TRUCK WASH
∆ FIRST AID STATION (FIRST AID KIT, EYE WASH, HAND WASH)
O BOOT WASH
* STATIONS WILL BE ADDED AS JOB PROGRESSES

Invirex Demolition, Inc.
1359 NEW YORK AVENUE · HUNTINGTON STATION, NEW YORK 11746
516 / 673-0007 · 718 / 937-8104
INDUSTRIAL - COMMERCIAL

RESPIRATORY PROTECTION PROGRAM

The use of respirators is strictly controlled by a trained and competent person, who is solely responsible for supplying all workers with the proper respirator, and training them as to its use, limitations and maintenance.

The following is a basic description of the respiratory protection program adhered to by Invirex Demolition, Inc. for the maximum in safety and efficiency during arsenic related projects.

SELECTION

The type of respirator Invirex Demolition, Inc. utilizes varies according to the concentration of arsenic in the air.

Due to this variation, the following guidelines are followed:

RESPIRATORY PROTECTION FOR INORGANIC ARSENIC PARTICULATE EXCEPT FOR THOSE WITH SIGNIFICANT VAPOR PRESSURE

Concentration of Inorganic Arsenic (as As) or Condition of Use		Required Respirator
(i)	Unknown or greater or lesser than 20,000 ug/m^3(20mg/m^3) or firefighting.	(A) Any full facepiece self-contained breathing apparatus operated in positive pressure mode.
(ii)	Not greater than 20,000 ug/m^3(20 mg/m^3)	(A) Supplied air respirator with full facepiece, hood, or helmet or suit and operated in positive pressure mode
(iii)	Not greater than 10,000 ug/m^3 (10 mg/m^3)	(A) Powered air-purifying respirators in all inlet face coverings with high-efficiency filters.[1] (B) Half-mask supplied air respirators operated in positive pressure mode.
(iv)	Not greater than 100 ug/m^3	(A) Half-mask air-purifying respirator equipped with high-efficiency filter.[1] (B) Any half-mask supplied air respirator.

All burners will wear a full facepiece air-purifying respirator equipped with a combination HEPA-Organic Vapor Filter.

[1]High-efficiency filter-99.97 pct efficiency against 0.3 micrometer monodisperse diethyl-hexyl phthalate (DOP) particles.

INDUSTRIAL - COMMERCIAL

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1359 NEW YORK AVENUE · HUNTINGTON STATION, NEW YORK 11746
516 / 673-0007 · 718 / 937-8104

RESPIRATORY PROTECTION PROGRAM

NOTIFICATION OF EXPOSURE LIMITS

All monitoring results are posted on the job site so that employees are aware of the concentration of inorganic arsenic, and the job supervisor is responsible for notifying the workers as to which respirator should be used. Any employee found to have been exposed at any time to airborne concentrations of arsenic in excess of the PEL shall be notified in writing not later than five days after the finding. The employee will also be timely notified of the corrective action being taken.

DONNING

Upon receiving a respirator, the worker is instructed by a competent person as to the proper donning procedure. The manufacturer's facepiece fitting instructions are used to establish the exact procedure to be followed for each specific respirator.

The workers are also informed of any conditions which may prevent a good face seal, such as the growth of a beard, sideburns, or temple pieces on glasses. The worker's diligence in observing these factors is evaluated by periodic check.

FIT TESTING

Upon being assigned to an individual, each respirator must undergo the isoamyl acetate test to insure a proper fit. The subject, after donning the respirator, is exposed to the substance of isoamyl acetate. If the odor/taste is detected, the respirator has a defective fit. To correct this, an adjustment or replacement would be necessary. This test can be utilized for both air purifying and air supplied respirators.

In addition to the isoamyl acetate test, each respirator must be tested prior to EACH USE for a proper fit. This is first done by a visual inspection, checking for any openings or leaks. Then, a negative pressure test is performed by closing off filter openings or air tube and inhaling gently until the facepiece collapses slightly. Breath is held for ten seconds - if the respirator remains slightly collapsed, and no inward leakage is detected, the respirator has a satisfactory fit.

A positive pressure test is then performed by closing off the filter openings or air tube, and exhaling gently into the facepiece. The respirator fit is considered satisfactory if slight positive pressure can be built up inside the facepiece without any evidence of outward leakage around the facepiece.

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INDUSTRIAL - COMMERCIAL

RESPIRATORY PROTECTION PROGRAM

RESPIRATOR MAINTENANCE AND REPAIR

All respirators are turned in at the end of the day to the qualified person in charge of the maintenance program, and new ones with new filters, if needed, are issued every morning.

The maintenance performed on the respirators shall include: Washing, sanitizing, rinsing and drying, inspection for defects, replacement of worn or deteriorated parts, repair if necessary and storage to protect against dust, sunlight, excessive heat, extreme cold, excessive moisture, damaging chemicals, and physical damage. All storage and maintenance will be performed on site in the respirator and safety room.

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Envirex (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
Ed Jennings		Ed Jennings	
Jay Schwald		Jay Schwald	
Clarence Williamson		Clarence Williamson	
George Hodges		George Hodges	
John Wickenhauser		John Wickenhauser	
Richie Richardson		Richie Richardson	
Jay Horton			
Jeff Jennings		Jeffrey E. Jennings	
Bryan Sullivan		Bryan Sullivan	
Danny Dawson		Danny Dawson	
Dieter Herforth		Dieter W. Herforth	
Charles Jones		Charles E. Jones Sr.	
Jack McCarty		Jack D. McCarty	
Donald Curbow		Donald Curbow	

I hereby certify that to the best of my knowledge this list is current for 3/87 (month/year).

Jay Schwald
Contractor Site Health and Safety Officer

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Invirex Demolition Inc (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
Ed Jennings		(b) (6)	
Jay Schwabl			
Clarence Williamson			
George Hodges			
Richie Richardson			
John Wickenhauser			
Jay Horton			
Jeff Jennings			
Brian Sullivan			
Jimmie Vest			
Danny Dawson			
Dieter Derforth			
Charles Jones			

I hereby certify that to the best of my knowledge this list is current for 3/87 (month/year).

Jay Schwabl
Contractor Site Health and Safety Officer

INDUSTRIAL · COMMERCIAL

Invirex Demolition, Inc.

1359 NEW YORK AVENUE · HUNTINGTON STATION, NEW YORK 11746
516 / 673-0007 · 718 / 937-8104

March 20, 1987

Every employee is given the opportunity for the following medical exams. Records of the exams are kept on the job site.

General Physical
Chest X-Ray
C B C
S M A
U A - Urine Analysis
Spirometry
Lead Level Blood
Arsenic Level
Sputum Cytology

EMPLOYEE NAME: John Wickenhauser - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First Aid — Holds American Red Cross card

II. On the Job Training (Other Sites, This Site)

I have been briefed & trained with arsenic in a safe & healthy controlled way.

III. Hazardous Waste Site Experience (Any Site)

Tetra Ethel lead Plant — Polyethelene Fumes, chlorine caustic.

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic. Specific info regarding arsenic & elements of the site health and safety plan have been reviewed with this employee. Based on the specific nature of the hazard, and the employee's previous exp., this worker is qualified for the job.

EMPLOYEE NAME: JONES CHARLES E. SR. -Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

My training in first aid was in the military & was tested yearly — Training through Army Reserve; up to date, but no card

II. On the Job Training (Other Sites, This Site)

I've Been briefed & trained to deal with ARSENIC in a safe & healthy controled way-
Respirators & respirator fit testing

III. Hazardous Waste Site Experience (Any Site)

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at the site are limited to arsenic for this employee. Specific info regarding arsenic & elements of the health and safety plan have been reviewed. Based on the specific nature of hazard, and other training provided, this employee qualified for job.

EMPLOYEE NAME: DIETER HERFORTH - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

WORKED FOR ASARCO 17 YEARS+
ALSO HAD FIRST AID THRU ASARCO, although not currently certified

II. On the Job Training (Other Sites, This Site)

HAZARDS AND HANDLING OF ARSENIC MATERIAL

III. Hazardous Waste Site Experience (Any Site)

LOADING & TRANSPORTING OF HAZARD MATERIAL AT ASARCO

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic for this employee. Specific info regarding arsenic & elements of health & safety plan have been reviewed with this employee. Based on training, experience & previous work with Asarco, this worker is qualified for work at this site!

EMPLOYEE NAME: Don Curbow - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

8 hr training at Bunker Hill lead smelter in Idaho in hazards of handling lead, respirators, etc.

II. On the Job Training (Other Sites, This Site)

Hazards of Arsenic and the health and respiratory protection
8 hr on the job training at Bunker Hill lead smelter

III. Hazardous Waste Site Experience (Any Site)

5yr at Bunker Hill lead smelter

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic for this employee. Specific information regarding arsenic & elements of health & safety plan have been reviewed with this employee. Based on training & previous experience, he is qualified for work at this site.

EMPLOYEE NAME: Jay Schwall - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)
40 hr asbestos removal course - N.J.

II. On the Job Training (Other Sites, This Site)
Aresnic hazzards and respirator protection
asbestos removal - Monsanto's Delaware River Plant

III. Hazardous Waste Site Experience (Any Site)
Monsanto - Nicephetine Plant
Pennwalt - chlorine caustic Plant,
Freeport Sulfur - Sulfur plant, offshore

IV. Evaluation of Training and Experience for Work on This Site
Health hazards at this site are limited to arsenic for this employee. Specific information regarding arsenic and elements of the site health and safety plan have been reviewed with this employee. Based on this training and experience, this worker is qualified to perform his duties at this site.

EMPLOYEE NAME: Jeffrey E. Jennings - Inspector

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site) New Jersey / 40 hours of Asbestos Removal Training

II. On the Job Training (Other Sites, This Site)

Arsenic hazards, Respirator protection / Asbestos Removal - Monsanto Delaware River Plant.

III. Hazardous Waste Site Experience (Any Site)

Monsanto - Nepheline plant
Pennwalt - Chlorine, caustic plant, tetron - mercury
Free Port Sulfur - Sulfur

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site are limited to arsenic for this employee. Specific information regarding arsenic and elements of the site health and safety plan have been reviewed with this employee. Based on this training and experience, this worker is qualified to perform his duties at this site.

EMPLOYEE NAME: Forest E. Jennings - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Chemical Plant - (Institute) West Virginia - 1969
8 months

II. On the Job Training (Other Sites, This Site)

Hazards of arsenic, clothing, respirators + decontamination procedures

III. Hazardous Waste Site Experience (Any Site)

Chevron Arsenic Plant which consisted of washing building down, vacuuming water + treating it. Richmond, California, 1986
(see attached form)

IV. Evaluation of Training and Experience for Work on This Site

Hazards of arsenic, protective clothing, respirators, + decontamination procedures above knowledge and specific info regarding arsenic & health and safety plan qualifies this worker for supervisory duties at the site.

EMPLOYEE NAME: DIETER HERFORTH - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

WORKED FOR ASARCO 17 YEARS+
ALSO HAD FIRST AID THRU ASARCO

II. On the Job Training (Other Sites, This Site)

HAZARDS AND HANDLING OF ARSENIC MATERIAL

III. Hazardous Waste Site Experience (Any Site)

LOADING & TRANSPORTING OF HAZARD MATERIAL AT ASARCO

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic for this employee. Specific info regarding arsenic & elements of health & safety plan have been reviewed with this employee. Based on training, experience & previous work with Asarco, this worker is qualified for work at this site.

EMPLOYEE NAME: JONES CHARLES E. SR. - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

My training in first aid was in the military & was tested yearly

II. On the Job Training (Other Sites, This Site)

I've Been briefed & trained to deal with ARSENIC in a safe & healthy controled way-

Respirators & respirator fit testing

III. Hazardous Waste Site Experience (Any Site)

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at the site are limited to arsenic for this employee. Specific info regarding arsenic & elements of the health and safety plan have been reviewed. Based on the specific nature of hazard, and other training provided, this employee qualified for job.

EMPLOYEE NAME: BRYAN C. SULLIVAN — Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

american Red Cross standard first aid course
asbestos school (40 hours)

II. On the Job Training (Other Sites, This Site)

contained breathing air course, use of all types of respiratory protection
arsenic training on the job

III. Hazardous Waste Site Experience (Any Site)

Penwalt Corp. - chlorine, tetran, mercury
tetraethel lead Plant
Monsanto - asbestos, napatine
City Service - Polythelene furnaces

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site are limited to arsenic for this employee. Specific info regarding arsenic & elements of the health & safety plan have been reviewed with this employee. Based on the specific nature of the hazard, and the employee's previous experience at industrial site with hazardous materials, this worker is qualified for duties here.

EMPLOYEE NAME: John Wickenhauser — Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First Aid

II. On the Job Training (Other Sites, This Site)

I have been briefed & trained with arsenic in a safe & healthy controled way.

III. Hazardous Waste Site Experience (Any Site)

Tetra Ethel lead Plant — Polyethelene Furnaces, chlorine caustic.

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic. Specific info regarding arsenic & elements of the site health and safety plan have been reviewed with this employee. Based on the specific nature of the hazard, and the employee's previous exp., this worker is qualified for the job.

EMPLOYEE NAME: Richie Richardson - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First Aid, Jr. Co. Graduate - 36 hrs. training - not hold a card

II. On the Job Training (Other Sites, This Site)

Contained breathing Air course
asbestos training on job

III. Hazardous Waste Site Experience (Any Site)

asbestos removal
Tetra Ethil Lead Plant
Tetron chemical - Penwalt Plant
Dialthern, chlorine, Potyethelene furnance

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site are limited to arsenic. Specific info regarding arsenic & elements of site health & safety plan have been reviewed with this employee. Based on the specific nature of the hazard, and the employee's previous experience at industrial sites with haz. materials, this employee is qualified.

EMPLOYEE NAME: Danny J Dawson - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First aid CPR
in Army Ft. ord Cal.
Does not hold current certif. card

II. On the Job Training (Other Sites, This Site)

On The Job Training
For Respiratory use,
Aresnic Hazards, and
Protection.

III. Hazardous Waste Site Experience (Any Site)

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site for this employee are limited to arsenic. Specific info regarding arsenic & elements of the site health & safety plan have been reviewed with this employee. Based on the specific nature of the hazard, and training provided for this job, this worker is qualified for duties here.

EMPLOYEE NAME: George E Hedges Jr - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

II. On the Job Training (Other Sites, This Site)

Has Been Briefed About
Arsenic In a Safe & Controlled Way
Respirators & respirator fit testing

III. Hazardous Waste Site Experience (Any Site)

City Service - Pollutheine Furance
Monsanto Chemical - Bridgeport N.J. Nephaline Plant

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site are limited to arsenic for this employee. Because of the specific nature of this hazard and the worker's previous experience in demolition-related activities at industrial plants with hazardous materials, this worker is qualified to perform duties at this site.

EMPLOYEE NAME: Clarence Williamson - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

II. On the Job Training (Other Sites, This Site)
Arsenic hazzards and required protection

III. Hazardous Waste Site Experience (Any Site)
Exxon Oil refinery
PPG - Tetra Ethel lead Plant
City Service - Polyethelene Furnaces

IV. Evaluation of Training and Experience for Work on This Site
Health hazards at this site are limited to arsenic for this employee. Specific information regarding arsenic & elements of the site health & safety plan have been reviewed. Based on the specific nature of the hazard, and the employee's previous experience at industrial sites with hazardous materials, this employee is qualified for work at the site.

EMPLOYEE NAME: BRUCE D. YESCHENKO - Invirex

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

II. On the Job Training (~~Other Sites,~~ This Site)

Bruce D Yeschenko 3-25-87
arsenic hazard training and elements of site health & safety plan.

III. Hazardous Waste Site Experience (Any Site)

ASTORIA OIL SERVICES INC.
ASTORIA, OREGON 97103 Bruce D Yeschenko
Hazardous chemicals on job site
use + control of such materials

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at site limited to arsenic. Specific info regarding arsenic & health & safety plans have been reviewed. Based on the specific nature of the hazard this employee is qualified for the job.

APPENDIX G

Tacoma Plant

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Invirex Demolition Inc.	1/16/87	Arsenic Trioxide

Jay Schmidt
Contractor Signature

J. C. Dungey
Asarco Signature

Ed Jennings
Arthur Stahle
Clarence Williams
Gillian Wickenhauser
Danny Dawson
Dieter Herfurth

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ENVIRONMENTAL
SERVICES
INCORPORATED

CORPORATE OFFICES:
1719 IRVING ROAD
EUGENE, OREGON 97402
503/688-4531

ASARCO

ASBESTOS ABATEMENT PROGRAM

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Tacoma, WA

ACCIDENT PREVENTION PROGRAM

APPENDIX

1. R.E.S.I. Policy
2. R.E.S.I. Safety Program Outline
3. R.E.S.I. Basic Job Safety Orders

HEALTH AND SECURITY AT WORK

POLICY

Roberts Environmental Services, Inc. laborers must be managed in ways to prevent accidents and professional diseases of employees and the public, while maintaining uninterrupted and efficient productivity.

Health and labor security must be considered as a part of the planning of the project. Consequently, necessary procedures must be taken to maintain health security and sanitation of working areas in conformity with the laws and the rules in force, regarding health security.

Staff direction of all levels have the duty to make sure that health and security laws are always observed, and adequate protection of material, security and health measures to be issued in order to eliminate all accidents, risks, and professional diseases.

The appreciation of the performance of each employee will take into consideration, his contribution, and efforts viewing the division's policy regarding health and security at work.

In conformity with the hereby policy, information programs, moulding and communication programs will be set up and available when necessary, so as to create and maintain consistent interest and enthusiasm, secure the required level of compliance regarding health and security laws and rules, and improve the methods used in this field.

Each staff member must accomplish the duties which are his responsibility in order to eliminate all diseases and wounds liable to strike his subordinates. Each employee should participate in setting up this above mentioned policy, in abiding with the labor security rules, in wearing, if required, the material and protective garments, in reporting to his superior any dangerous working condiitions, and when needed, suggest corrective measures to be applied.

ROBERTS ENVIRONMENTAL SERVICES, INC.

SAFETY PROGRAM OUTLINE

GENERAL STATEMENT

It will be the policy of R.E.S.I. to comply with all safety and accident prevention requirements of the contracts, and to incorporate accident and fire prevention into the planning and operational phases of all construction, and maintenance, in a sufficiently broad scope to cover the range of all the operations. Our general program will be adapted to meet existing conditions, and will possess sufficent flexibility to cover changing situations.

ACCIDENT PREVENTION RESPONSIBILITY

The Project Manager is completely responsible for accident prevention in all operations. He, in turn will delegate complete safety instructions to each crew member.

Supervisors will be charged with the responsibility of enforcement of safe practices and compliance with safe standards in their overall operations. Supervisory, as well as, personnel will be disciplined for any indication of continued violation.

R.E.S.I. agrees to comply with all safety measures as outlined by the Contractor, to participate in overall job safety activities led by the Contractor and to follow the program submitted by the Contractor.

SUB-CONTRACTOR PARTICIPATION

R.E.S.I. crew, and their supervisors will have safety meetings on the job site, at least weekly.

SAFETY ENGINEERING SUPERVISION

The safety program will be directed by R.E.S.I. Project Manager.

FIRST AID MEDICAL FACILITIES

First aid kits will be provided throughout the work area, according to a standard established by CSST. Communication between the job, the hospital, the doctors, and the First Aid Station, will be by telephone.

PROTECTIVE EQUIPMENT

A) Hard hats will be required for all personnel, and will be obligatory on the work area.

B) Goggles will be provided, and their use insisted upon in all areas where eye injury exposure exists. This applies specifically to such operations as:

(1) Use of impact tools.
(2) All grinding, chipping, and scaling.
(3) Handling of molten metal, acids, and caustics.
(4) Welding and cutting.

C) Ear plugs or muffs will be provided and used where there is exposure to excessive noise levels, and the possibility of ear injury exists.

D) Where dusts, contaminants, or other potentially hazardous materials are present in the atmosphere, the use of appropriate respirators will be required.

E) The use of protective clothing will be insisted upon where it is needed as indicated in "Construction Safety Standards."

F) No hot line work is anticipated, but if encountered, non-conductive hard hats, rubber gloves, and other protective equipment will be provided.

G) Safety belts, ropes, and harnesses will be provided for workmen on swing or suspended scaffolds, and for others subjected to height hazards.

H) All welders will be required to wear helmets, gloves, and protective bibs to insure against flash burns.

FIRE PREVENTION AND PROTECTION

Preventive measures will be taken to eliminate fire hazards throughout all operations, with specific attention being paid in this regard to storage areas and shops. The environment will be protected against fire hazards. The personnel will be instructed on the available equipment and procedures.

"No Smoking" areas will be established in shops, warehouse, and in areas where flammable liquids or substances are dispensed or handled.

CONSTRUCTION EQUIPMENT AND PLANT

Power tools will be inspected regularly and will at all times be adequately guarded and effectively grounded. Pneumatic tools will be inspected regularly. They will, in all cases, be equipped with safety clips and all hose connections will be safety lashed.

ELECTRICITY AND LIGHTING

Both, permanent and temporary wiring, will be installed only by qualified personnel and in conformity with the electrical code.

All portable electric power tools will be effectively grounded through three wire connections. Fixed electrical equipment will be grounded.

Wherever possible, lines will be de-energized where work is to be performed in their vicinity.

Where equipment, particularly that of the boomed type, is required to work in the vicinity of energized power lines, strict orders requiring a minimum of 10 feet clearance will be rigidly enforced. Rubber tired boomed equipment will be grounded by drag chains where operation in the immediate vicinity of such wires is necessary, the unit will be equipped with a substantial mechanical ground.

In every case, the use of electrical equipment will be in accordance with "Construction Safety Standards."

MOTOR VEHICLE OPERATION

Only authorized drivers having valid driver's licenses will be permitted to operate job vehicles. They will be thoroughly screened before such authorization is extended.

Speed and other traffic regulations will be indicated by appropriate signs where necessary.

Vehicles will be inspected regularly and properly maintained. They will be loaded in proper balance, without excessive overhang, and within the load limits of both the vehicle and roads to be traveled.

INDOCTRINATION OF NEW EMPLOYEES

Each new employee will receive a copy of R.E.S.I. Casual Labor Handbook. The job instructions will have a tear-off section on the bottom of the sheet, requiring that the employee sign, indicating that he has read, and will be guided by the instructions. This tear-off section will become a permanent part of his employment record. New employees will be screened by the Project Manager as to their attitude, past accident record, and physical capabilities. In addition, all employees will be required to complete a personal information form which will give evidence as to possible limitations on work assignments.

PROTECTION OF THE PUBLIC

Only authorized visitors will be permitted in the work area.

Personal protective equipment will be issued to authorized visitors and they will be escorted at all times while on the job site.

SAFETY MEETINGS

Weekly on-site safety meetings will be instituted where the Project Manager will meet with the crew to discuss advance planning for the forthcoming weeks activity.

Safety and the anticipation and elimination of hazards will be an integral part of these meetings. The meetings will be conducted at a specific hour of a specified day of the week. This day and hour will remain constant throughout the entire job and attendance of these meetings will be mandatory. The Resident Engineer will be advised of the scheduled date and hour of such meetings and his attendance, whenever possible, is invited.

Supervisors will be charged with the responsibility of conducting tool box meetings at least weekly with the employed under their direction, at which time forthcoming hazards will be thoroughly discussed.

ACCIDENT REPORTING

All first aid treatment cases will be reported weekly to the right person on appropriate forms.

OCCUPATIONAL HEALTH AND ENVIRONMENT CONTROL

Before construction activities are undertaken that could potentially represent a hazard to the workmen from excessive noise levels, explosive gasses, atmospheric contaminates, or from poor illumination, the Manager shall have the safety engineers survey the potential hazards and recommend appropriate measures to eliminate or control the hazards. The safety engineer shall survey the work area regularly to determine that the potential hazards are being controlled or eliminated. Control measures will first be aimed at eliminating the hazards by controlling dust emmissions, muffing noise sources, providing additional ventilation and adding additional lighting. Additionally, personal protective equipment will be issued where its use is required for the protection of the workmen and the use of this equipment by the men will be required.

WELDING AND CUTTING

Compressed gas cylinders shall be transported, moved, and stored in a safe and workman like manner. The cylinders shall be stored outside and the oxygen cylinders shall be physically separated from the acetylene cylinders and each cylinder properly tagged per content. All regulators, hoses, torches, and tips shall be inspected regularly and kept in safe working condition.

Manual arc welding electrode holders, cable connectors, and ground clamps shall be maintained in safe condition. Equipment in need of repair shall not be used.

Mechanical ventilation shall be provided to remove fumes and smoke from the work area and exhaust it into the atmosphere. The system shall operate such that clean uncontaminated air shall replace the withdrawn contaminated air. The contaminated air shall not be discharged in any area where it might present a hazard to other work areas and shall not be discharged in an area where it might present a hazard to other workmen. This system shall be of sufficient capacity and so arranged as to remove fumes and smoke near the source and keep the concentration of them within safe limits.

All fire hazards in the vicinity fo the welding or cutting operations shall be removed to a safe distance or protected with a non-combustable material. Suitable fire extinquishing equipment shall be immediately available in the work area.

STORAGE OF MATERIALS

Material will be stored only in specified approved storage areas. Housekeeping will be maintained at a high level throughout this area. The materials will be piled as to prevent collapse, slides, and roll-downs. and stored in a manner to permit ready safe access in the event of fire or other emergency. Highly flammable materials will be stored in separate, well ventilated, approved structures. Oxygen and acetylene will be stored outside and adequately separated from each other, and properly tagged. All compressed gas cylinders will be stored and physically retained in an upright position.

CONCLUSION

All men working on or around ewuipment will be thoroughly indoctrinated as to its safe operation.

Passengers and/or unauthorized operators will not be permitted on equipment. Machinery will be shut down while being refueled and greased.

It is the intent of R.E.S.I. to institute a "Accident Prevention Program" that WILL WORK and no reasonable effort or expense will be spared in this endeavor. In general, the slogan, 'NO JOB IS SO IMPORTANT, OR SO RUSHED, THAT IT CANNOT BE PERFORMED SAFELY', will be the watchword of the project.

ROBERTS ENVIRONMENTAL SERVICES, INC.

ACCIDENT PREVENTION PROGRAM

BASIC JOB SAFETY ORDERS

The one thing that no one wants on this job is an accident. R.E.S.I. and all crew working on the job are going to do everything possible to keep them from occurring. R.E.S.I. and your Project Manager are pledged to do everything we can to keep you from getting injured. The end result, however, depends on you. Yes, you are the one who can do the most to keep yourself and your fellow worker from being involved in accidents that can kill or cripple for life.

The following list of safety orders was prepared for your protection, so be guided by them in all cases. Anyone disregarding them or otherwise failing to cooperate in the overall STOP ACCIDENT effort will find himself out of a job.

1. Use good judgement and common sense to work safely.

2. When driving, you must have a valid driver's license and must observe speed limits, stop signs, and other regulations at all times. Disregard of this rule will be cause for dismissal.

3. Lack of knowledge of safe practices will not be accepted as an excuse for violation of safety rules.

4. Notify all persons who might be endangered by the work you are doing.

5. You should insist on the observance of Safe Practices by fellow workers.

6. All persons entering the work area will be required to wear a hard hat at all times. If you show up on the job without your hat, you will not be permitted to work.

7. You will be expected to park your car in the parking lot. You will not be permitted to park in other areas on the job.

8. YOU MUST REPORT ALL INJURIES, NO MATTER HOW MINOR, TO YOUR SUPERVISOR IMMEDIATELY.

9. Call to the attention of your Project Manager any condition that you think is unsafe.

10. Be aware of all equipment working in your area, especially, backing vehicles.

11. Do not ride on loads or outside of pickups or trucks. No one is to ride on truck beds.

12. Horseplay on the job is prohibited.

13. Intoxication, drinking, or the possession of liquor on the job is positively forbidden. Anyone found disregarding this rule will be discharged.

14. Regard all electrical wiring, either in the air or lying on the ground as though it were carrying high voltage. DO NOT TOUCH it until it has been established beyond all doubt that the line is dead.

15. If you use a fire extinquisher, let your Project Manager know immediately so that it may be laid aside for refilling.

16. Wear gloves when handling broken concrete or other rough materials.

17. A) Use proper eye protection when chipping concrete, using cutting torch, welding sandblasting, or cleaning with air jets and other such operations.

    B) Use all safety equipment where needed, safety belts, life jackets, goggles, etc.

18. Use caution when carrying loads across icy or slippery surfaces.

19. Do not attempt to lift objects that are too heavy or awkward. GET HELP. Use proper lifting methods at all times. Lift with your legs - not your back.

20. Do not smoke on the job site or other areas where any combustible or flammable materials are stored.

21. You will be expected to do your part to help maintain job "housekeeping." Remember a clean job is a good job and a safe job.

22. All exposed opening must be barricaded or covered.

23. Keep out from under suspended loads.

24. Do not remove guards or other safety devices from machinery or equipment except when machinery or equipment is stopped, and removal is required to make repairs.

25. Stop belts, conveyors, and other mechanized equipment before repair work is started on them.

26. Stand clear of any taut cables and lifting devices.

27. Do not work on poor or unsafe ladders or scaffolds. Ladders must be of safe, sound construction and be free of defects. Steel scaffolding must be fully floored over and if possible, it should be tied fitted with wheels. Ladders must be tied at the top and adequately secured at the bottom.

28. Make certain that the area in rear is clear before backing vehicles.

29. If you are operating a vehicle or machine, make sure your windshield, windows, and the inside of the cab are clean. Books, newspapers, pop bottles, etc., will not be permitted inside truck cabs. If there is a fire extinquisher or first aid kit in your vehicle, make sure it is properly filled, stocked, and in good order.

30. Tools having burrs, cracks, mushroomed heads, broken, loose, or splintered handles, must not be used.

31. Use tools only for the purposes for which they were designed.

32. Do not let tools lay around in the work area. Return all tools and other equipment to proper place after use.

33. All portable electric hand tools must be grounded.

34. A) Keep electrical cords and tools out and away from water.
B) Place electrical cords and air hoses so they pose the least possible tripping hazard. This is important on ramps, walkways, and scaffolds particularly.
C) Report all defective electrical equipment at once.

35. A) Check air lines and pneumatic tools prior to use to assure couplings are securely connected.
B) Be sure air is shut off line before removing the tools or before breaking a connection.

36. Never toss or throw tools or materials. Hand them or use lines.

37. Protect tools from falling when working from scaffolds or other elevations.

38. Machinery must be shut down before cleaning, refueling, repairing, or oiling.

I have read and completely understand the BASIC JOB SAFETY ORDERS and agree to be bound by these rules. I realize that failure to do so may cause my dismissal from the job.

Signed: _____

Occupation: _____

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INVIREX, ASARCO PLANT

Rustin Way

Tacoma, WA

OPERATIONAL PLAN

APPENDIX

1. Composite
2. Medical Surveillance
3. Removal Task Orientation
4. Roster of Washington Certified Technicians
5. Respirator Program
6. Respirator Fit Test
7. Respirator Cleaning Records
8. Signature of Performance
9. Asbestos Equipment
10. Visitor's Log

INVIREX - ASARCO PLANT

ASBESTOS PROJECT

COMPOSITE

Asbestos and Arsenic - (Occupational Health and Environment).

Effects of Exposure to Airborne Asbestos and Arsenic - Acknowledged.

Existence of Asbestos and Arsenic - Acknowledged.

Certified Industrial Hygienist - Michael W. Krause Of Hazcon in Seattle, Washington will be the certified Industrial Hygienist - Certification number of American Board of Industrial Hygiene, 2394. Phone number, (206)526-8508.

NIOSH PAT Program 98103-002 - Hazcon, Seattle, WA will be analyzing air and material samples taken at the Asarco Plant.

Monitoring - Samples taken by Michael W. Krause or a directly supervised technician, will be by using SKC medium flow pumps, high volume samplers, samples collected inaccordance with NIOSH Method 7400 and/or OSHA Reference Method. A minimum of 1,000 liters of air will be drawn from outside the isolated area, for samples and clearance samples. 4 samples a day will be taken.

Bulk Sampling - Lab #0455 - Bulk samples are analyzed BY Trained Lab Technician participating in E.P.A. quality assurance program, Lab #0455.

MEDICAL SURVEILLANCE

All Roberts Environmental Services, Inc., technicians for the Asarco Project, are Red Cross trained. For minor cuts and bruises, first aid equipment will be present at all times on the job site.

If required, the following medical facilities will be used:

A) Hospital - St. Joseph Hospital
Tacoma, WA
(206)627-4101

B) Paramedics - Shepard 24 hour Paramedic Service
Tacoma, WA
(206)383-5416

C) Fire Department - Fire Station #5
(206)591-5737

D) Police Department - Tacoma, WA
1-800-562-9800

REMOVAL TASK ORIENTATION

Task #1 Organize and assign asbestos technician roster for this project. All technicians for this project will be Washington Certified to work with asbestos and arsenic.

Task #2 Organize all in-field reporting systems to include medical/exposure records for each technician assigned to the project. Conduct Qualitative Fit Test of breathing devices for each technician.

Task #3 Organize and develop removal action plan (See below).

Task #4 Identify disposal site. Disposal will be taken care of by the Asarco Plant.

Task #5 Conduct safety/project orientation meeting with all R.E.S.I. technicians. During the course of this meeting, all identified hazards, such as, arsenic, asbestos, electrical, heights, scaffolding, etc. will be discussed. In addition to safety, an orientation relative to the removal action plan will be conducted. Discuss procedures to take in the event of minor/major injury.

Task #6 Implement action plan.

Containment. Isolate the work space by constructing a polyethylene membrane.

DECONTAMINATION

Technicians will be wearing two Tyvex disposable suits with hoods during abatement. They will also wear steel-toed rubber boots. When abatement is done, they will leave the containment area through a three stage decontamination chamber, taking off the outer Tyvex suit and placing it in the proper disposable container. All hands and boots will be initially washed in a receptacle, then proceed to an air booth where they will follow booth procedure. Next area will be to discard the last layer of Tyvex suit and overalls to dispose of or wash. Technicians will then proceed to showers. The last step will be to clean room and to put on their street clothes.

NEGATIVE AIR

Install negative air machine(s) to provide negative pressure within the isolated work space on a 24 hour basis.

PROTECTIVE CLOTHING

Equip decontamination facility with all required, and assigned personal protective clothing and equipment.

RECORD KEEPING

Establish daily entry log for the project will will include:

a. Record of date, time, and purpose of all authorized personnel, entering and departing the isolated area.

b. Record of daily monitoring activities.

c. Transmittal documenting the events of the day, work accomplished, accidents, and the like.

SIGNING

Post all appropriate asbestos signs in their respective locations.

REMOVAL PROCEDURES

Once removal commences, all asbestos containing material will be thoroughly wetted with BWE-5000 and water, prior

to actually being removed. Wetted asbestos will then be placed in 6 mil, double bags, marked for asbestos contents. Bagged asbestos will then be moved to the fourth compartment of the decontamination facility. All bags will be marked:

"Danger
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard"

TRANSPORTATION

Bagged asbestos will be transported by the Asarco Plant.

COMPLETION

At the completion of the project, all monitoring records and copies of the daily log, will be provided for permanent record keeping. (ENG FORM 4921-R)

EXHIBITS

A. Respiratory Fit Program

B. Signature of Performance

C. Equipment and Materials List

D. Daily Log

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CORPORATE OFFICES:
1719 IRVING ROAD
EUGENE, OREGON 97402
503/688-4531

ROSTER OF WASHINGTON CERTIFIED TECHNICIANS FOR ASARCO PLANT
Rustin Way, Tacoma Washington.

1. John Steele
2. Jeff Johnson
3. Percy Nichols
4. Dave Gamez
5. Richard Wagner
6. Richard Kiley
7. Mike Grimes
8. Walt O'Mealy
9. Angelito Caylao

ROBERTS ENVIRONMENTAL SERVICES INCORPORATED

CORPORATE OFFICES:
1719 IRVING ROAD
EUGENE, OREGON 97402
503/688-4531

RESPIRATOR PROGRAM PART A

SUBJECT: Respiratory Protection Program

AFFECTED CODES/ DIRECTIVES: OAR 437-129-025, PD No. A-47 preceeding P.D. No. C-4 Issued July 23,1979 Revised Jan. 1,1985

OSHA CFR 1910.134

WISHA No. WAC 296-62-07109

(1) PURPOSE: The purpose of this particular program is to ensure the safety and well being of Roberts Environmental Services, Inc. employees.

(2) BACKGROUND: Roberts Environmental Services, Inc. is a company that is involved in asbestos. To be in compliance with Accident Prevention Division- Workers' Compensation Department, when we encounter situations where respirators are used; a written respirator program is required.

(3) ACTION: The attached respirator program meets or exceeds the state and federal laws. R.E.S.I. requires all employees to follow this respirator program. Mandatory are fit tests for all asbestos employees semi-annually. Each job will itself require a smoke-irritant test per individual with his/her assigned respirator.

(4) EFFECTIVE DATE: This program directive is effective immediately and will remain in effect until cancelled or superseded.

Revised Aug.1,1986

ROBERTS ENVIRONMENTAL SERVICES INCORPORATED
EUGENE (503) 688-4531

RESPIRATORY PROTECTIVE PROGRAM

GENERAL

The intent of this written program is to define R.E.S.I.'s rules now in effect regarding the use of respirator masks for personal protection against the following airborne contaminants:

1. Asbestos Fibers
2. Toxic Fumes and Gases
3. _____

The regulations contained herein are not optional for our employees. In compliance with Occupational Health Regulations of the Oregon Safe Employment Act, our company considers this policy mandatory and a condition of employment for each individual.

AVAILABILITY OF RESPIRATORS

Each employee that requires a respirator will be issued one at R.E.S.I. expense with replacement parts, cartridges and filters upon request. The following types of respirators are available:

1. MSA
2. North
3. _____

USE OF RESPIRATORS

Each employee for R.E.S.I. shall wear an approved respirator, properly fitted at all times while performing an operation defined as HAZARDOUS: or in the immediate area (within 10 feet) for an extended period of time (more than 5 minutes) where another employee is performing a HAZARDOUS operation. The following operations are considered HAZARDOUS:

1. Asbestos Abatement
2. Noxious Gases Exposure
3. Toxic Material Cleanup

SELECTION OF RESPIRATORS

Only NIOSH/MESA approved respirators have been chosen for use in R.E.S.I. program. The choice between these respirators is dependent upon the airborne contaminant present, the HAZARDOUS operation performed, and on the basis of comfort and ease of obtaining a proper individual fit. R.E.S.I. will provide these respirators, maintaining a supply in the shop area. The useful life of each respirator will depend mainly on the employee's job duties and the actual time the unit is in use. Generally, useful life would be expected to vary from 1 year to 2 year.

These respirators are also noted to have the following limitations:

1. Not less than 19.5% Oxygen
2. Not to be used in atmospheres immediately dangerous to health.
3. _____

TRAINING OF EMPLOYEES

Each R.E.S.I. employee will be shown and trained how to use and maintain the respirator based on this respirator use and maintenance program. This training will be given by _____.

R.E.S.I. employee's proof of the training and instructions received shall consist of the following: In addition to the training received, the respirator user must read, understand and be able to apply the contents of this respirator program in the daily use, care and safekeeping of the said respirator.

To ensure the availabilty of this respirator program at all times, copies of the same shall be distributed as follows:

a. 1 copy - to be in employee's asbestos file
b. 1 copy - to be kept in the office file
c. 1 copy - to be kept in the shop file

FITTING OF RESPIRATORS

Proper fitting of respirators is essential if R.E.S.I. employees are to receive the protection for which this program is designed. Air which passes around the edges of the respirator, rather than through it, is not filtered air. In order to ensure a good face seal, the following rules must be observed:

1. The respirator and straps must be in place and worn in the appropriate position. To adjust head bands, pull the free ends tight until a comfortable fit is obtained. All straps shall be secure.

2. To adjust face piece properly, simply position chin firmly in the chin cup and manually shift mask until the most comfortable position is located. Make final adjustments in the head band and do not break the nasal seal. Modification to the respirator or straps shall not be made.

3. Proper fit must be checked each time the respirator is worn according to the manufacturer's instructions. Respirators shall not be worn when projections under the face piece prevents a good face seal. Note: Such conditions may be a growth of beard, sideburns, temple pieces on glasses or skull cap that projects under the face piece.

4. The fitted respirator must be tested using the appropriate qualitative fit tests. For example, isoamyl acetate should be used to check respirator fit when using organic vapor respirators by determing if the wearer can detect the "banana oil" odor. Irritant fume tests can be used with particulate respirators to ensure proper fit.

In the event a R.E.S.I. employee is unable to obtain a satisfactory fit with the type of respirator furnished, we will provide a different type of respirator.

MAINTENANCE OF RESPIRATORS

Respirators will be cleaned after each day's use and placed in a plastic bag and stored.

At the end of each week (or more often, if needed) respirators will be completely cleaned and disinfected by carrying out the following procedures:

1. Remove the air-purifying elements from the respirator. Air purifying elements will never be washed and disinfected.

2. Immerse the respirator in a warm (120degree F) aqueous solution of germicidal detergent. The respirator face piece and parts will be scrubbed gently with a cloth or soft brush, making sure that all foreign matter is removed from all surfaces of the rubber exhalation valve flap and plastic exhalation valve seats.

3. After washing and disinfecting the respirator, rinse the same with clean, warm (120degree F) water and then allow the respirator to dry.

4. After the respirator is dry, attach the air-purifying elements.

5. Store the respirator in the container provided for that purpose.

Any malfunction on the respirator shall be reported to Project Manager or Shop Supervisor with replacement parts available in the shop.

After normal use, respirators will not be hung on the wall but will be stored in plastic bags and in the provided container.

After inspection, cleaning and necessary repair, or after each day's use, the respirator shall be stored in the plastic bag and in the container provided for that purpose. In storing the respirator, the face piece and exhalation will be in a normal position so as to prevent the abnormal set of elastomer parts during storage.

Each R.E.S.I. worker assigned to use a respirator will maintain and rountinely inspect it before and after each use. Respirators will be inspected monthly by Maureen Stapp to assure that they are kept clean and in satisfactory working condition. Respirator inspection shall include:

1. Tightness of connections
2. Conditions of face piece
3. Condition of head bands
4. Condition of cartridges
5. Condition of valves
6. Rubber or elastomer for pliability
7. Rubber or elastomer for deterioration

NOTE: Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

Worn out parts will be replaced immediately.

RESPIRATOR PROGRAM EVALUATION

R.E.S.I. will monitor the effectiveness of this program by:

1. Frequent unscheduled observation of employee activities throughout the job-site to confirm proper respirator use.

2. Observation of and discussion with new employees to confirm proper training has been carried out.

3. Periodic discussion with supervisors and general personnel during appropriate scheduled meetings.

RESPIRATOR FIT TEST RECORD

S.S.#_____

NAME_____

Type of fit test used_____

Name of test operator_____

Date_____

RESPIRATOR BRAND	NUMBER	SIZE	PASS/FAIL?
#1		S M L	P F
#2		S M L	P F
#3		S M L	P F
#4		S M L	P F

NAME:_____

JOB:_____

LOCATION:_____

This record indicates that you have passed or failed a qualitative fit test as shown above for the particular respirators shown. Other types should not be used until fit tested.

This record must be kept "for at least the duration of employment".

WEEKLY RESPIRATOR CLEANING RECORD

RESPIRATOR NUMBER______ Date in__________ Date out__________

JOB____________________ LOCATION____________________

SUPERVISOR____________________

WHEN CLEANED:	BY WHOM:

RESPIRATOR PROGRAM PART D

Daily Respirator Cleaning Record

JOB: ______________________________ LOCATION: ____________________

SUPERVISOR: ______________________

Respirator #'s	Date	By Whom
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
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________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________
________________	____________	________________

RESPIRATOR PROGRAM PART E

PER JOB CLEANING RECORD

RESPIRATOR NUMBER ______________ Date in ___________ Date out ____________

JOB ______________________________ LOCATION __________________

SUPERVISOR _____________________

ISSUED TO:	WHEN CLEANED:	BY WHOM:

ASBESTOS
SIGNATURE OF PERFORMANCE

Client _____

This is to certify that, as of _____, the asbestos abatement project identified as _____ is complete as defined in the agreement (s) between Roberts Environmental Services, Incorporated and _____.

This is to certify that to the best of Roberts Environmental Services knowledge all regulations pertaining to asbestos abatement and this project have been met.

This is to certify that the asbestos and asbestos contaminated debris pertaining to this project have been properly disposed of at _____.

_____ Project Manager

_____ Project Supervisor

Final Inspection date was _____.

This is to certify that I have inspected the job-site and found it to be acceptable. All work contracted for has apparently been performed in an acceptable manner in complete accordance with the specifications.

_____ Client Representative

ASBESTOS EQUIPMENT

Breathing Apparatus:	Half-Mask where applicable and P.A.P.R's
Negative Pressure Air:	Micro Trap 2000 cfm
Vacuum(s):	15 gl HEPA Filters
Hand Tools:	Non-powered, such as, snippers, pry bars, spuds, knives, etc.

DATE: _____

PROJECT: _____

SUPT.: _____

DAILY JOB SIGN-IN/SIGN-OUT AND VISITORS LOG

ALL PERSONS ENTERING AND LEAVING WORK AREA MUST SIGN IN AND SIGN OUT EVERY TIME!!

EMPLOYEES - SIGN NAME CLEARLY

VISITORS/INSPECTORS, ETC. - SIGN NAME CLEARLY AND PRINT NAME OF EMPLOYER ON LINE BELOW.

COPIES OF ALL LOGS ARE TO BE PLACED IN PROJECT FILE.

NAME	EMPLOYER	TIME IN	TIME OUT	TIME IN	TIME OUT

INVIREX, ASARCO PLANT

Rustin Way

Tacoma, WA

OPERATIONAL PLAN

DETAIL ANALYSIS

FOR

ASBESTOS REMOVAL

GENERAL REMOVAL PROTOCOL FOR ASARCO PLANT

I Protocol for job-site entry for work preparation.

A. Workers decontamination enclosure system.

1. Purpose - Entry into job-site and preparation for asbestos abatement.

2. This enclosure is located outside of work area and consists of three chambers and two airlocks as follows:

a) The equipment room has a curtain doorway to the work area and an airlock to the shower area.

b) The shower room has two airlocks, one to the equipment room and one to the clean room. The shower has a hot and cold water control at the taps.

c) The clean room consists of an airlock to the shower room and a curtained doorway to the adjacent building area. The clean room has a first aid kit, storage for workers and visitors, clothing and shoes, a place to sit down, and a work-site entry log book. Work, respirators and decontamination procedures shall be conspicuously posted. There shall be a supply of clean protective clothing, respirators, and cartridges in the clean room at all times.

3. Personnel protection procedures in isolated work areas:

a) Each Roberts Environmental Service, Inc., worker shall, upon entering the job-site; remove street clothes in the clean change room, put on and fit his respirator, and clean protective clothing and sign in on the work-site entry logbook before entering the equipment room or the work area.

b) Roberts Environmental Services, Inc., workers shall, each time they leave the work area: remove gross contamination from clothing before leaving the work area; proceed to the equipment room and remove and dispose of disposable work clothes; remove and store shoes, boots and other equipment except respirators; still wearing the respirator, proceed naked to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves; remove filters, dispose of filters if wet, in the container provided for this purpose; and wash and rinse the inside of the respirator.

c) Following showering and drying off, each Roberts Environmental Service, worker shall proceed directly to the clean room and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the work area from the clean change room, each worker shall put on his respirator with clean filters, dress in clean protective clothing, and sign in on the worksite entry logbook.

d) Contaminated work footwear and other equipment shall be stored in the equipment room when not in use in the work area. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area.

e) Roberts Environmental Service Inc. workers shall not eat, drink or chew gum or tobacco at the worksite except in the established clean room. Smoking is prohibited.

f) Roberts Environmental Services Inc. workers shall be fully protected with respirators and protective clothing immediatley prior to the first disturbance of asbestos containing

or contaminated material until clean-up is completed.

4. Access to isloated work areas by others.

a) Except for emergency personnel, Roberts Environmental Service limits access to the work area to authorized visitors.

b) Roberts Environmental Service shall provide dress, respirators, as specified above.

c) All authorized visitors shall be subject to the personnel protection provisions specified above and shall sign in and out on the worksite entry logbook.

11. Building of containment and decontamination unit in isolation asbestos removal area.

A. Work Area Preparation: The following isolation procedures shall be performed in the order which they are presented.

1. Set up the worker decontamination enclosure system and plastic sheeting corridor to nearest outside doorway. Once these systems are installed, they shall be utilized in the specified manner for the ingress and egress of all personnel and equipment, except in emergency situations.

2. Seal off all openings, including but not limited to doorways, windows, and other penetrations of the work area, with plastic sheeting sealed with tape or spray adhesive, except openings left for Hepa air purification systems, which shall be properly Hepa filtered.

3. A Micro-Trap air purifying equipment negative pressure fan system shall be used to insure lower static pressure in the isolated work area and in surrounding areas, a flow of air through all parts of the isolated work area towards the air purifying equipment and minimum air contamination levels at abatement worker breathing zones. Discharge from air purifying equipment shall be ducted outside the building. Roberts Environmental Services will use one or more units of capacity.

as recommended by the manufacturer for the volume of the isolated work area, but in no case shall air flow be less than one air change every 15 minutes.

4) All floor and wall surfaces are covered with plastic sheeting when applicable and sealed with tape. Floors are covered first so that plastic extends at least 12" up on walls, then the walls are covered with plastic sheeting to the floor level, thus overlapping the floor material by a minimum of 12". All this procedure is done only when applicable.

B. No asbestos abatement work shall occur unless work area isolation has been found acceptable for specifications compliance by the Roberts Environmental Service's project manager.

1) Prior to the first use, and at the beginning of each shift, during abatement work, enclosures shall be given a complete visual inspection by the shift foreman or Roberts Environmental Service's project manager. This shall include inspection of the Hepa air purification system and associated filters.

2) Periodic inspections are made as required during each shift to assure continued proper functioning of the enclosure and Hepa system. After containment is done and checked, all the proper tools are stored inside. Razor knives, shovels, scrapers, sprayers, wire cutters, etc.

C. Abatement procedures:

1) The asbestos material shall be sprayed with amended water. A fine spray of this solution shall be applied to prevent fiber disturbance preceding the removal of the asbestos material. The asbestos shall be sufficiently saturated to prevent emission of airborne fibers.

2) Remove asbestos material while damp and pack in sealable plastic bags (6 mil minimum thickness) bearing EPA warning label. Material is placed in 6 mil. bags for transport from contained area.

3) After completion of stripping work, all surfaces from which asbestos has been removed are brushed and/or wet sponged or cleaned by an equivalent method to remove all visible material. During this work the surfaces being cleaned shall be kept wet.

4) Final clean-up of work area.

a) All equipment and sealed containers used in work area shall be removed from work area after decontamination of outer services.

b) All windows, doors, etc. shall remain sealed and Hepa filter negative air pressure systems shall remain in service.

c) Post abatement air sampling shall be taken within 24 hours of final cleaning, after visual clearance by a monitoring agent.

d) When the final inspection by the Roberts Environmental Services, project manager, and air sampling test results are satisfactory, the decontamination systems and remaining barriers shall be removed.

e) All polyethylene material, tape, cleaning material, and contaminated clothing shall be double bagged and labeled for asbestos waste material.

f) Sealed containers containing asbestos are then transported to a proper disposal facility. At the present job site Asarco is responsible for disposal.

D. Workers Decontamination.

1) When work is completed, on or at, the end of a shift when workers leave isolated area, they remove the outer layer of Tyvek Disposable suit. They then wash hands and boots in recepticals provided them in the decontamination unit.

2) Workers then return to the worker decontamination enclosure system still wearing masks and second layer of Tyvek Disposable suit.

3) Roberts Environmental Service workers shall, each time they leave the work area; proceed to the equipment room and remove and store shoes, boots and other

equipment except respirators; still wearing the respirators proceed naked to the showers; clean the outside of the respirator with soap and water while showering; remove the respirator; thoroughly shampoo and wash themselves; remove filters, dispose of filters if wet in the container provided for the purpose; and wash and rinse the inside of the respirator.

4) Following showering and drying off, each worker shall proceed directly to the clean change room and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the work area from the clean change room, each worker shall put on his respirator with clean filters, dress in clean protective clothing, and sign in on the worksite entry logbook.

11. Specific removal protocol for removing asbestos from side of treater building.

1) Roberts Environmental Service will have pre-sampling for arsenic and asbestos to be done by Hazcon, Seattle, Washington.

2) All debris that would interfere with work area and scaffolding will be removed.

3) The tin on the sides of the building will be washed.

4) Scaffolding will be put in place.

5) Men equipped with PAPR's and Tyvek suits will remove tin from sides of building in which we will be working. This tin will be stacked and removed from work area by Invirex, after being sprayed with encapsulant.

6) Following procedures outlined in our general asbestos protocol area to be abated of asbestos will be contained. Asbestos will be sprayed with surfactant or encapsulant, whichever is deemed necessary before removal starts.

7) Once all containment and decontamination areas are built and sealed, and negative air equipment attached and operating, work will commence.

8) Using razor knives, tin snipes, and wire cutters, the chicken wire and mastik covering will be cut, folded, wet with amended water, placed in 6 mil. properly marked bags, sealed, and labeled, taken to the area where they are washed, double bagged and put into secure area.

9) Using procedures outlined in General Removal Protocol, the remaining asbestos will be wet with amended water, using approriate tools will be removed, placed in 6 mil. bags and sealed, then removed to designated area, washed, placed in double bags, sealed with tape and placed in secure area.

10) After gross removal area in which asbestos has been removal will be cleaned as described in General Protocol, then area will be encapsulated.

11) Following clean-up and encapsulation contained area, scaffolding and visqueen will be washed, wiped and vacummed with a wet vac to remove any visible traces of asbestos.

12) All personnel who work inside containment will follow procedures outlined in General Protocol for decontamination and preparation to leave job site at the end of the shift.

13) Negative air machine and containment will be left in place until both visual and air sampling have passed clearance.

14) After clearances are granted, visqueen will be double double bagged and taken to secure area to be disposed of by Asarco at approved disposal facility.

15) Scaffolding will be removed.

PROPOSED

SPECIFIC PROTOCOL FOR REMOVING ASBESTOS IN BOILER ROOM

1) Roberts Environmental Services will have pre-sampling for arsenic and asbestos to be done by Hazcon, Seattle, Washington.

2) All debris that would interfere with work area and scaffolding will be removed.

3) Scaffolding will be put in place.

4) All doors and open vents will be sealed with 6 ml. visqueen.

5) A decontamination unit will be built as described in our General Removal Protocol and attached to doorway leading into the room.

6) All sections to have abatement will be wet with amended water. The protocol outlined in our general protocol will be the procedures used for abatement, bagging, and removal from contained area and securing.

7) We will use the same procedures as outlined in our General Removal Protocol to clean area after gross removal, so it can be monitored for clearance approval.

8) After clearance has been given, visqueen will be double bagged and placed in a secure area to be disposed of by Asarco.

9) Same procedure as outlined in General Removal Protocol for decontamination by Roberts Environmental Service's workers.

SPECIFIC ASBESTOS PROTOCOL FOR REMOVAL OF TRANSITE FROM ROOFS

1) Air sampling will be done for arsenic contamination prior to commencement of jobs.

2) Prior to beginning removal, transite will be washed thoroughly to remove arsenic contamination on transite as much as possible.

3) Safety lines will be placed on roof and secured.

4) Roberts Environmental Service's crew will be dressed in Tyvek suits using PAPR's for removal with safety belts and lanyards.

5) Materials to be used - pallettes, visqueen, tape, amended water, hammers, chisels and water hoses.

6) Roberts Environmental Services will utilize two, 5 men crews. Two men from each crew will be working on the roof to free transite from fasteners, and to relocate transite to a point to which it can be covered to the 3 men below who will take it to a designated area, stack it on pallettes, wet it with amended water, wrap it with 6 ml. visqueen, seal with tape and spray adhesive labels. Asarco will transport transite from job site to designated disposal facility.

7) Roberts Environmental Service's men, when finished with shift will go through change house and follow same procedures as listed in General Removal Protocol for preparation to leave job site.

DOCUMENTS INCORPORATED BY REFERENCE

A. The current issue of each document shall govern. Where conflict among requirements or with these Specifications exists, the more stringent requirements shall apply.

1. U.S. Environmental Protection Agency National Emissions Standards for Hazardous Air Pollutants (NESHAPS). (Code of Federal Regulations Title 40, Part 61, Subparts A and B.)

2. U.S. Environmental Protection Agency Office of Toxic Substances Guidance Document, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings." EPA Report Number 560/5-85-024 ("Purple Book").

3. U.S. Department of Labor Occupational Safety and Health Administration (OSHA):

   a. Title 29 Code of Federal Regulations Section 1910.1001 - General Industry Standard For Asbestos.

   b. Title 29 Code of Federal Regulations Section 1910.134 General Industry Standard For Respiratory Protection.

   c. Title 29 Code of Federal Regulations Section 1926 Construction Industry.

   d. Title 29 Code of Federal Regulations Section 1910.2 Access to Employee Exposure and Medical Records.

   e. Title 29 Code of Federal Regulations Section 1910.1200 Hazard Communication.

4. National Institute for Occupational Safety and Health (NIOSH), 30 CFR, Part II, Respirators.

5. American National Standards Institute (ANSI) NY; ANSI Standard Z 88.2-1980 "American National Standards Practice for Respiratory Protection", latest edition.

6. Oregon Administrative Rules Chapter 340, Division 25, Department of Environmental Quality.

7. Oregon Administrative Rules Chapter 437, Division 115, Asbestos and Division 22.

8. Uniform Building Code (U.B.C.), 1982, regulations as applicable.

9. All related electrical work shall be performed in accordance with the National Electrical Code.

10. All local ordinances, regulations, or rule pertaining to the asbestos, including its storage, transportation, and disposal.

11. Washington Industrial Safety and Health Rules and Regulations Chapter 296-62 WAC

DOCUMENTS INCORPORATED BY REFERENCE (continued)

12. Puget Sound Air Pollution Control Authority: Asbestos Regulations.

MEDICAL SURVEILLANCE

FOR ROBERTS ENVIRONMENTAL SERVICES, INC.

Health History
Occupational History

Chest X-Ray
Complete Blood Count
Urine Analysis - Routine
Pulmonary Function Test
Sputum Smear
Blood/Urine Arsenic Level at Discretion of Physician

Health History includes completion of Medical History

Asbestos Exposure History and Verbal History Physician gathers following Federal Guidelines (enclosed).

Physician: Dr. Don Fisher
Board Certified Occupational Health Physical also Toxicologist

Dr. John Holland
Board Certified Occupational Health Physician

Contact: Karen Carlton
591-6709

ASBESTOS EXPOSURE HISTORY SUPPLEMENT Date _____

Please fill out this form as accurately as possible, starting with the most recent exposure. This will help in recommending whether you should be tested or not. We are concerned with asbestos fibers you may have inhaled or swallowed working directly with asbestos pipe insulation, asbestos grout or cement, transite pipe, asbestos cement board, enclosed brake drum linings or any other forms of asbestos dust.

Estimate dates by giving the month and year of exposure if you can. Your cooperation in filling out this form is appreciated.

Form of Asbestos	What Did you Do With it?	Date of Exposure

Name: _____ SSN: _____

70/2341/173-7
08/06/86

HEALTH VENTURE

REPORT OF PHYSICAL EXAMINATION

I, the undersigned, do hereby consent to undergo a medical examination, including blood specimens, X-rays and other examinations which the examiner(s) may consider necessary to complete the medical evaluation. I understand that this examination is not an indication of my status of total health, but rather a statement of health as it relates to my employment application.

Signature in Full: _____ Date: _____

NAME: _____
(Last) (First) (Middle)

ADDRESS: _____

_____

JOB CLASSIFICATION: _____

DEPARTMENT: _____

EMPLOYER: _____

ADDRESS: _____

_____

☐ Female ☐ Male Birth Date ___/___/___
Mo Day Yr

Height _____ Weight _____

Temp _____ Resp _____ Pulse _____ BP RA _____ LA _____

VISION SCREENING

WITHOUT CORRECTIVE LENSES

Far Right 20/_____ Left 20/_____ Both 20/_____
Near Right 20/_____ Left 20/_____ Both 20/_____

WITH CORRECTIVE LENSES

Far Right 20/_____ Left 20/_____ Both 20/_____
Near Right 20/_____ Left 20/_____ Both 20/_____

Color	Pass	Fail

Depth Perception

Lateral	Normal	Abnormal	Vertical	Normal	Abnormal

Horizontal Field - Right Eye ° Left Eye °

HEARING SCREEN

LEFT EAR ☐ Without Aide ☐ With Aide RIGHT EAR ☐ Without Aide ☐ With Aide

	250	500	1000	2000	3000	4000	6000	8000		250	500	1000	2000	3000	4000	6000	8000
HZ																	
Db																	

TESTING RESULTS

☐ Normal ☐ Mild Hearing Impairment ☐ Moderate Hearing Impairment ☐ Moderately Severe Hearing Impairment ☐ Severe Hearing Impairment ☐ Profound Hearing Impairment

Threshold Shift from Previous Test ☐ YES ☐ NO ☐ Unknown

CHECKLIST	Normal	Abnormal	DESCRIBE IN FULL ANY ABNORMAL FINDINGS
HANDS/SKIN			
Hair			
Skin Color/Texture			
Nails			
HEAD/EYES			
Configuration			
Lids			
Conj/Sclera			
Fundi			
Pupils/Equal/Light Reaction			
EOM			

HEALTH VENTURE

MEDICAL HISTORY

NAME: _____ AGE: _____ PHONE: _____

DATE: _____

Check YES OR NO to the following questions:

MEDICAL HISTORY - Skin

Have you noticed:

	YES	NO	
1.	☐	☐	changes in your hair or skin color or skin texture?
2.	☐	☐	changes in the size or color of a mole?
3.	☐	☐	skin rash, burning, itching or other types of skin sensitivity?

MEDICAL HISTORY - Ears, Eyes

Have you:

	YES	NO	
4.	☐	☐	had serious earaches or ear infections?
5.	☐	☐	had ringing or buzzing noises in your ears?
6.	☐	☐	had serious eye infections or injury?
7.	☐	☐	had persistent blurred vision or visual loss?

MEDICAL HISTORY - Nose and Throat

Do you have:

	YES	NO	
8.	☐	☐	bleeding gums?
9.	☐	☐	frequent nosebleeds?
10.	☐	☐	sinus trouble?
11.	☐	☐	thyroid problems:

MEDICAL HISTORY - Respiratory/Cardiovascular

Do you:

	YES	NO	
12.	☐	☐	cough up blood?
13.	☐	☐	have unusual shortness of breath?
14.	☐	☐	wake up night short of breath?
15.	☐	☐	have severe pains in hands with vibration or cold exposure?
16.	☐	☐	get pains or cramps in the back of you legs while walking?
17.	☐	☐	have swelling of feet or legs?
18.	☐	☐	have bouts of heartbeats so fast that you can't count them?
19.	☐	☐	feel pain, pressure or tightness in the chest which forces you to stop walking?

20. ☐☐ have high blood pressure?
21. ☐☐ have sickle cell anemia?
22. ☐☐ have an abnormal EKG (electrocardiogram)?

MEDICAL HISTORY - Digestive

Have you:

	YES	NO	
23.	☐	☐	gained or lost 20 pounds in the last year?
24.	☐	☐	suffered from indigestion or heartburn?
25.	☐	☐	found swallowing painful?
26.	☐	☐	had pain in your stomach?
27.	☐	☐	frequently used antacid medication?
28.	☐	☐	vomitted blood?
29.	☐	☐	had black or bloody bowel movements?
30.	☐	☐	had hemorrhoids?
31.	☐	☐	had hepatitis?
32.	☐	☐	had cirrhosis?
33.	☐	☐	been told that you are a diabetic?

MEDICAL HISTORY - Urinary

Do you:

	YES	NO	
34.	☐	☐	urinate frequently at night?
35.	☐	☐	have difficulty starting or stopping urination?
36.	☐	☐	have pain or burning with urinaton?
37.	☐	☐	have red, black, brown or bloody urine?
38.	☐	☐	have a history of kidney stones?

MEDICAL HISTORY Musculoskeletal

Have you:

	YES	NO	
39.	☐	☐	had a hernia?
40.	☐	☐	had a problem with your bones or joints, including fractures, limitations of movement, stiffness or pain? If yes, describe:_____
41.	☐	☐	had problems with recurring low back pain? If yes, how many times have you had an attack of this condition?_____

MEDICAL HISTORY - Neurologic/Head

Have you:

	YES	NO	
42.	☐	☐	had a seizure or fainting spell?
43.	☐	☐	had a skull fracture or head injury?
44.	☐	☐	suffered from migraine headache?
45.	☐	☐	suffered from depression or anxiety?

MEDICAL HISTORY - Self Care

Have you:

	YES	NO	
46.	☐	☐	been under physician's care for an acute or chronic condition?
47.	☐	☐	had abnormal menstrual bleeding problems?
48.	☐	☐	had any unusual swelling of your testicles?
49.	☐	☐	had any unusual discharge from your penis or vagina?

LIFE-STYLE

Do you:

	YES	NO	
50.	☐	☐	consume more than six ounces of alcohol per week? (one ounce equals one glass beer, wine or mixed drink)
51.	☐	☐	smoke, or have you ever smoked cigarettes? How many per day?_____ For how many years?_____
52.	☐	☐	use any other forms of tobacco, (snuff, pipe, cigar, chewing tobacco). If yes, please describe: _____
53.	☐	☐	Do you wear a seat belt? If yes, circle the appropriate percent of times. 0-25% 25-50% 50-75% 75-100%

OCCUPATIONAL HISTORY

Have you:

	YES	NO	
54.	☐	☐	had an industrial accident or occupational disease?
55.	☐	☐	had, or now have, any claims now pending for work-related disease or accident? If yes, explain:_____
56.	☐	☐	been under any work restrictions (e.g., lifting restrictions). If yes, explain:_____

Are you or have you ever been exposed to any of the following either on or off the job?

	YES	NO	
57.	☐	☐	sprays or powders for insects or plants?
58.	☐	☐	irritating chemicals or gases?
59.	☐	☐	prolonged x-ray or other radiation?
60.	☐	☐	dusty conditions like sandblasting, grinding or drilling or rock, coal, silica, asbestos or asbestos products?

Beginning with current (recent) job and working back the last three (3) jobs, complete the following:

Employer/Industry	Dates	Duties

ILLNESSES AND MEDICAL PROBLEMS

Family Medical History

Do any of the following run in your family?

	YES	NO	Relationship
Allergies including Asthma			
Arthritis			
Cancer			
Diabetes			
Heart Disease			
High Blood Pressure			
Stroke			
Tuberculosis			

MEDICATION INFORMATION

Please list all the medications you regularly use including birth control pills, antacids and antihistamines. _____

_____

Please describe any hospitalizations in the last 10 years.

REASON	MONTH	YEAR

Immunization Record

Please give the approximate date of the following immunizations and tests, if known.

	DATE		DATE
TB Testing		Influenza Vaccine	
Diptheria/Tetanus		Rubella (German/three day)	
Tetanus		Hepatitis B Vaccine	
Varicella		Herpes Zoster	
Varicella Screen Positive/Negative		Varicella Vaccine	

ALLERGIES: _____

_____

_____

YES NO

☐ ☐ Do you presently have a physical condition that may necessitate your absence from work within the next six months? If yes, please explain under the next question.

Describe anything else which you feel may be important in your medical history, including any condition not specifically referred to in the preceding questions.

_____

_____

_____

_____

Signature in Full	Date History Completed

Part 1
INITIAL MEDICAL QUESTIONNAIRE

1. NAME _____

2. SOCIAL SECURITY # ___ ___ ___ ___ ___ ___ ___ ___ ___
(1 2 3 4 5 6 7 8 9)

3. CLOCK NUMBER ___ ___ ___ ___ ___ ___
(10 11 12 13 14 15)

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____
(Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. DATE _____ ___ ___ ___ ___ ___ ___
(16 17 18 19 20 21)

11. Date of Birth _____ ___ ___ ___ ___ ___ ___
Month Day Year (22 23 24 25 26 27)

12. Place of Birth _____

13. Sex
1. Male ___
2. Female ___

14. What is your marital status?
1. Single ___
2. Married ___
3. Widowed ___
4. Separated/ Divorced ___

15. Race
1. White ___
2. Black ___
3. Asian ___
4. Hispanic ___
5. Indian ___
6. Other ___

16. What is the highest grade completed in school? _____
(For example 12 years is completion of high school)

OCCUPATIONAL HISTORY

17A. Have you ever worked full time (30 hours per week or more) for 6 months or more? 1. Yes ___ 2. No ___

IF YES TO 17A:

B. Have you ever worked for a year or more in any dusty job? 1. Yes ___ 2. No ___ 3. Does Not Apply ___

Specify job/industry _____ Total Years Worked ___

Was dust exposure: 1. Mild ___ 2. Moderate ___ 3. Severe ___

C. Have you ever been exposed to gas or chemical fumes in your work? 1. Yes ___ 2. No ___
Specify job/industry _____ Total Years Worked ___

Was exposure: 1. Mild ___ 2. Moderate ___ 3. Severe ___

D. What has been your usual occupation or job--the one you have worked at the longest?

1. Job occupation _____

2. Number of years employed in this occupation _____

3. Position/job title _____

4. Business, field or industry _____

(Record on lines the years in which you have worked in any of these industries, e.g. 1960-1969)

Have you ever worked:

		YES	NO
E.	In a mine?.....	[ ]	[ ]
F.	In a quarry?.....	[ ]	[ ]
G.	In a foundry?.....	[ ]	[ ]
H.	In a pottery?.....	[ ]	[ ]
I.	In a cotton, flax or hemp mill?.....	[ ]	[ ]
J.	With asbestos?.....	[ ]	[ ]

18. PAST MEDICAL HISTORY

		YES	NO
A.	Do you consider yourself to be in good health?	[ ]	[ ]
	If "NO" state reason _____		
B.	Have you any defect of vision?.....	[ ]	[ ]
	If "YES" state nature of defect _____		
C.	Have you any hearing defect?.....	[ ]	[ ]
	If "YES" state nature of defect _____		

D. Are you suffering from or have you ever suffered from:

a. Epilepsy (or fits, seizures, convulsions)?	[__]	[__]
b. Rheumatic fever?	[__]	[__]
c. Kidney disease?	[__]	[__]
d. Bladder disease?	[__]	[__]
e. Diabetes?	[__]	[__]
f. Jaundice?	[__]	[__]

19. CHEST COLDS AND CHEST ILLNESSES

19A. If you get a cold, does it usually go to your chest? (Usually means more than 1/2 the time) — 1. Yes __ 2. No __ 3. Don't get colds __

20A. During the past 3 years, have you had any chest illnesses that have kept you off work, indoors at home, or in bed? — 1. Yes __ 2. No __

IF YES TO 20A:

B. Did you produce phlegm with any of these chest illnesses? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. In the last 3 years, how many such illnesses with (increased) phlegm did you have which lasted a week or more? — Number of illnesses __ No such illnesses __

21. Did you have any lung trouble before the age of 16? — 1. Yes __ 2. No __

22. Have you ever had any of the following?

1A. Attacks of bronchitis? — 1. Yes __ 2. No __

IF YES TO 1A:

B. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. At what age was your first attack? — Age in Years __ Does Not Apply __

2A. Pneumonia (include bronchopneumonia)? — 1. Yes __ 2. No __

IF YES TO 2A:

B. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. At what age did you first have it? — Age in Years __ Does Not Apply __

3A. Hay Fever? — 1. Yes __ 2. No __

IF YES TO 3A:

B. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. At what age did it start? — Age in Years __ Does Not Apply __

23A. Have you ever had chronic bronchitis? — 1. Yes __ 2. No __

IF YES TO 23A:

B. Do you still have it? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

D. At what age did it start? — Age in Years __ Does Not Apply __

24A. Have you ever had emphysema? — 1. Yes __ 2. No __

IF YES TO 24A:

B. Do you still have it? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

D. At what age did it start? — Age in Years __ Does Not Apply __

25A. Have you ever had asthma? — 1. Yes __ 2. No __

IF YES TO 25A:

B. Do you still have it? — 1. Yes __ 2. No __ 3. Does Not Apply __

C. Was it confirmed by a doctor? — 1. Yes __ 2. No __ 3. Does Not Apply __

D. At what age did it start? — Age in Years __ Does Not Apply __

E. If you no longer have it, at what age did it stop? — Age stopped __ Does Not Apply __

26. Have you ever had:

A. Any other chest illness? — 1. Yes __ 2. No __

If yes, please specify _____

B. Any chest operations? 1. Yes __ 2. No __

If yes, please specify _____

C. Any chest injuries? 1. Yes __ 2. No __

If yes, please specify _____

27A. Has a doctor ever told you that you had heart trouble? 1. Yes __ 2. No __

IF YES TO 27A:

B. Have you ever had treatment for heart trouble in the past 10 years? 1. Yes __ 2. No __ 3. Does Not Apply __

28A. Has a doctor ever told you that you had high blood pressure? 1. Yes __ 2. No __

IF YES TO 28A:

B. Have you had any treatment for high blood pressure (hypertension) in the past 10 years? 1. Yes __ 2. No __ 3. Does Not Apply __

29. When did you last have your chest X-rayed? (Year) __ __ __ __ (25 26 27 28)

30. Where did you last have your chest X-rayed (if known)? _____

What was the outcome? _____

FAMILY HISTORY

31. Were either of your natural parents ever told by a doctor that they had a chronic lung condition such as:

	FATHER 1. Yes	2. No	3. Don't Know	MOTHER 1. Yes	2. No	3. Don't Know
A. Chronic Bronchitis?	__	__	__	__	__	__
B. Emphysema?	__	__	__	__	__	__
C. Asthma?	__	__	__	__	__	__
D. Lung cancer?	__	__	__	__	__	__
E. Other chest conditions	__	__	__	__	__	__
F. Is parent currently alive?	__	__	__	__	__	__
G. Please Specify	__ Age if Living __ Age at Death __ Don't Know			__ Age if Living __ Age at Death __ Don't Know		

H. Please specify cause of death

_____ _____

COUGH

32A. Do you usually have a cough? (Count a cough with first smoke or on first going out of doors. Exclude clearing of throat.) [If no, skip to question 32C.] 1. Yes __ 2. No __

B. Do you usually cough as much as 4 to 6 times a day 4 or more days out of the week? 1. Yes __ 2. No __

C. Do you usually cough at all on getting up or first thing in the morning? 1. Yes __ 2. No __

D. Do you usually cough at all during the rest of the day or at night? 1. Yes __ 2. No __

IF YES TO ANY OF ABOVE (32A, B, C, or D), ANSWER THE FOLLOWING. IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO NEXT PAGE.

E. Do you usually cough like this on most days for 3 consecutive months or more during the year? 1. Yes __ 2. No __ 3. Does not apply __

F. For how many years have you had the cough? Number of years __ __ Does not apply __ __

33A. Do you usually bring up phlegm from your chest? (Count phlegm with the first smoke or on first going out of doors. Exclude phlegm from the nose. Count swallowed phlegm.) (If no, skip to 33C) 1. Yes __ 2. No __

B. Do you usually bring up phlegm like this as much as twice a day 4 or more days out of the week? 1. Yes __ 2. No __

C. Do you usually bring up phlegm at all on getting up or first thing in the morning? 1. Yes __ 2. No __

D. Do you usually bring up phlegm at all during the rest of the day or at night? 1. Yes __ 2. No __

IF YES TO ANY OF THE ABOVE (33A, B, C, or D), ANSWER THE FOLLOWING: IF NO TO ALL, CHECK DOES NOT APPLY AND SKIP TO 34A.

E. Do you bring up phlegm like this on most days for 3 consecutive months or more during the year? 1. Yes __ 2. No __ 3. Does not apply __

F. For how many years have you had trouble with phlegm? — Number of years __ Does not apply __

EPISODES OF COUGH AND PHLEGM

34A. Have you had periods or episodes of (increased*) cough and phlegm lasting for 3 weeks or more each year? *(For persons who usually have cough and/or phlegm) — 1. Yes __ 2. No __

If YES TO 34A

B. For how long have you had at least 1 such episode per year? — Number of years __ Does not apply __

WHEEZING

35A. Does your chest ever sound wheezy or whistling

1. When you have a cold? — 1. Yes __ 2. No __
2. Occasionally apart from colds? — 1. Yes __ 2. No __
3. Most days or nights? — 1. Yes __ 2. No __

IF YES TO 1, 2, or 3 in 35A

B. For how many years has this been present? — Number of years __ Does not apply __

36A. Have you ever had an attack of wheezing that has made you feel short of breath? — 1. Yes __ 2. No __

IF YES TO 36A

B. How old were you when you had your first such attack? — Age in years __ Does not apply __

C. Have you had 2 or more such episodes? — 1. Yes __ 2. No __ 3. Does not apply __

D. Have you ever required medicine or treatment for the(se) attack(s)? — 1. Yes __ 2. No __ 3. Does not apply __

BREATHLESSNESS

37. If disabled from walking by any condition other than heart or lung disease, please describe and proceed to question 39A.
Nature of condition(s)_____

38A. Are you troubled by shortness of breath when hurrying on the level or walking up a slight hill? — 1. Yes __ 2. No __

IF YES TO 38A

B. Do you have to walk slower than people of your age on the level because of breathlessness? — 1. Yes __ 2. No __ 3. Does not apply __

C. Do you ever have to stop for breath when walking at your own pace on the level? — 1. Yes __ 2. No __ 3. Does not apply __

D. Do you ever have to stop for breath after walking about 100 yards (or after a few minutes) on the level? — 1. Yes __ 2. No __ 3. Does not apply __

E. Are you too breathless to leave the house or breathless on dressing or climbing one flight of stairs? — 1. Yes __ 2. No __ 3. Does not apply __

TOBACCO SMOKING

39A. Have you ever smoked cigarettes? (No means less than 20 packs of cigarettes or 12 oz. of tobacco in a lifetime or less than 1 cigarette a day for 1 year.) — 1. Yes __ 2. No __

IF YES TO 39A

B. Do you now smoke cigarettes (as of one month ago) — 1. Yes __ 2. No __ 3. Does not apply __

C. How old were you when you first started regular cigarette smoking? — Age in years __ Does not apply __

D. If you have stopped smoking cigarettes completely, how old were you when you stopped? — Age stopped __ Check if still smoking __ Does not apply __

E. How many cigarettes do you smoke per day now? — Cigarettes per day __ Does not apply __

F. On the average of the entire time you smoked, how many cigarettes did you smoke per day? — Cigarettes per day __ Does not apply __

G. Do or did you inhale the cigarette smoke? — 1. Does not apply 2. Not at all 3. Slightly 4. Moderately 5. Deeply __

40A. Have you ever smoked a pipe regularly? (Yes means more than 12 oz. of tobacco in a lifetime.) — 1. Yes __ 2. No __

IF YES TO 40A:
FOR PERSONS WHO HAVE EVER SMOKED A PIPE

B. 1. How old were you when you started to smoke a pipe regularly? — Age __

2. If you have stopped smoking a pipe completely, how old were you when you stopped? — Age stopped __ / Check if still smoking pipe __ / Does not apply __

C. On the average over the entire time you smoked a pipe, how much pipe tobacco did you smoke per week? — __ oz. per week (a standard pouch of tobacco contains 1 1/2 oz.) / Does not apply __

D. How much pipe tobacco are you smoking now? — __ oz. per week / Not currently smoking a pipe __

E. Do you or did you inhale the pipe smoke? — 0. Never smoked __ / 1. Not at all __ / 2. Slightly __ / 3. Moderately __ / 4. Deeply __

41A. Have you ever smoked cigars regularly? (Yes means more than 1 cigar a week for a year) — 1. Yes __ 2. No __

IF YES TO 41A
FOR PERSONS WHO HAVE EVER SMOKED CIGARS

B. 1. How old were you when you started smoking cigars regularly? — Age __

2. If you have stopped smoking cigars completely, how old were you when you stopped. — Age stopped __ / Check if still smoking cigars __ / Does not apply __

C. On the average over the entire time you smoked cigars, how many cigars did you smoke per week? — Cigars per week __ / Does not apply __

D. How many cigars are you smoking per week now? — Cigars per week __ / Check if not smoking cigars currently __

E. Do or did you inhale the cigar smoke? — 0. Never smoked __ / 1. Not at all __ / 2. Slightly __ / 3. Moderately __ / 4. Deeply __

Signature _____ Date _____

Part 2
PERIODIC MEDICAL QUESTIONNAIRE

1. NAME _____

2. SOCIAL SECURITY # __ __ __ __ __ __ __ __ __ __ (1 2 3 4 5 6 7 8 9)

3. CLOCK NUMBER __ __ __ __ __ __ (10 11 12 13 14 15)

4. PRESENT OCCUPATION _____

5. PLANT _____

6. ADDRESS _____

7. _____ (Zip Code)

8. TELEPHONE NUMBER _____

9. INTERVIEWER _____

10. DATE _____ __ __ __ __ __ __ (16 17 18 19 20 21)

11. What is your marital status? — 1. Single __ / 2. Married __ / 3. Widowed __ / 4. Separated/Divorced __

12. OCCUPATIONAL HISTORY

12A. In the past year, did you work full time (30 hours per week or more) for 6 months or more? — 1. Yes __ 2. No __

IF YES TO 12A:

12B. In the past year, did you work in a dusty job? — 1. Yes __ 2. No __ 3. Does Not Apply __

12C. Was dust exposure: — 1. Mild __ 2. Moderate __ 3. Severe __

12D. In the past year, were you exposed to gas or chemical fumes in your work? — 1. Yes __ 2. No __

12E. Was exposure: — 1. Mild __ 2. Moderate __ 3. Severe __

12F. In the past year, what was your: — 1. Job/occupation? _____ 2. Position/job title? _____

13. RECENT MEDICAL HISTORY

13A. Do you consider yourself to be in good health? Yes ___ No ___

If NO, state reason _____

13B. In the past year, have you developed:

	Yes	No
Epilepsy?	___	___
Rheumatic fever?	___	___
Kidney disease?	___	___
Bladder disease?	___	___
Diabetes?	___	___
Jaundice?	___	___
Cancer?	___	___

14. CHEST COLDS AND CHEST ILLNESSES

14A. If you get a cold, does it usually go to your chest? (Usually means more than 1/2 the time)

1. Yes ___ 2. No ___
3. Don't get colds ___

15A. During the past year, have you had any chest illnesses that have kept you off work, indoors at home, or in bed?

1. Yes ___ 2. No ___
3. Does Not Apply ___

IF YES TO 15A:

15B. Did you produce phlegm with any of these chest illnesses?

1. Yes ___ 2. No ___
3. Does Not Apply ___

15C. In the past year, how many such illnesses with (increased) phlegm did you have which lasted a week or more?

Number of illnesses ___
No such illnesses ___

16. RESPIRATORY SYSTEM

In the past year have you had:

	Yes or No	Further Comment on Positive Answers
Asthma	___	
Bronchitis	___	
Hay Fever	___	
Other Allergies	___	
Pneumonia	___	
Tuberculosis	___	
Chest Surgery	___	
Other Lung Problems	___	
Heart Disease	___	

Do you have:

	Yes or No	Further Comment on Positive Answers
Frequent colds	___	
Chronic cough	___	
Shortness of breath when walking or climbing one flight or stairs	___	

Do you:

Wheeze	___	
Cough up phlegm	___	
Smoke cigarettes	___	Packs per day ___ How many years ___

Date _____ Signature _____

BILLING CODE 4510-28-C

TACOMA PLANT

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Roberts Environmental Services Inc	3/16/87	Arsenic Trioxide

Contractor Signature

ASARCO Signature

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Roberts Environ Services (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
PERCY NICHOL	ROBERTS	(b) (6)	3/26
WALTER OMEALY	ROBERTS		3/26
ANGELITO CAYHAO	ROBERTS		3/26
JEFF JHONSON	ROBERTS		3/26
MIKE GRIMES	ROBERTS		3/26
RICHARD WAGNER	ROBERTS		3/26
ARTHUR MIMS	ROBERTS		3/26
HERB VANCLEVE	ROBERTS		3/26
JHON STEELE	ROBERTS		3/26
DAVID GAMEZ	ROBERTS		3/26

I hereby certify that to the best of my knowledge this list is current for 3/87 (month/year).

John Steele
Contractor Site Health and Safety Officer

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Roberts Environ Services (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
Percy Nichols	Roberts	ASARCO Plant	3/17/87
Walt Omerly	Roberts	Asarco	
Angelito Caylao	Roberts	Asarco	
Jeff Johnson	Roberts	Asarco	
Dike Grimes	Roberts	Asarco	
Richard Wagner	Roberts	Asarco	3-17-87
Arthur Mims	Roberts	Asarco	
Herb Van Cleve	Roberts	Asarco	
John Steele	Roberts	Asarco	3-17-87
David Gamez	Roberts	Asarco	3-17-87

I hereby certify that to the best of my knowledge this list is current for 3/87 (month/year).

John Steele
Contractor Site Health and Safety Officer

EMPLOYEE NAME: John Steele

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

WASHington ASBESTOS CERTIFICATION SCHOOL

HAZARD WASTE SCHOOL. Portland State

II. On the Job Training (Other Sites, This Site)

~~WEYCO~~ WEYERHAUSER, SPRINGFIELD, OREGON

ASARCO

GEORGIA PACIFIC - MEDFORD, OREGON

SOUTHWEST INDUSTRIES - ALBANY, OREGON (ASBESTOS - AND HAZARDOUS WASTE)

GLIDE, OREGON SCHOOLS NUMEROUS SPILLS

EUGENE, OREGON SCHOOLS

III. Hazardous Waste Site Experience (Any Site)

~~[redacted]~~ ASARCO

IV. Evaluation of Training and Experience for Work on This Site

Health hazards limited to asbestos and to certain extent arsenic. Based on training for asbestos removal, and additional training for arsenic, this individual is qualified for work at this site.

EMPLOYEE NAME: Arthur L. Mims [illegible]

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

30 hrs asbestos Removal [illegible]
certified in the state of Washington

II. On the Job Training (Other Sites, This Site)

1 1/2 MONTH M AND M INVIRONMENT
Has been provided training on arsenic, lead & respirators as previous Asarco employee [illegible]

III. Hazardous Waste Site Experience (Any Site)

None

IV. Evaluation of Training and Experience for Work on This Site

Health hazards limited to asbestos and to certain extent arsenic. Based on training for asbestos removal & previous training and experience at Asarco, this worker qualified for job.

EMPLOYEE NAME: Herb Van Cleve

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Wash. Certification
32 (Hrs)

II. On the Job Training (Other Sites, This Site)

One year experience in asbestos removal

III. Hazardous Waste Site Experience (Any Site)

Sea-Tac airport 12/3/86
Crab pot restaurant 7/86
House office bldg (Olympia) 7/86

IV. Evaluation of Training and Experience for Work on This Site

Health hazards limited to asbestos and to certain extent lead based on training for asbestos removal and previous training & experience this worker qualified for this

EMPLOYEE NAME: Jeffrey A. Johnson [illegible] Roberts

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

30 hour Asbestos Removal Seminar [illegible]
Washington — Certified asbestos
worker

II. On the Job Training (Other Sites, This Site)

3½ years of asbestos removal

III. Hazardous Waste Site Experience (Any Site)

Dow Corning P.C.B Removal

IV. Evaluation of Training and Experience for Work on This Site

Daily Saftey meetings & good
work practices, daily fit test

Health hazards limited to asbestos &
to a certain extent [illegible]. Based on
training for asbestos [illegible]
additional training for [illegible]
worker qualified for job.

EMPLOYEE NAME: Percy Nichols ~ Roberts

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

washington Asbestos
HaZ Con – Wash [illegible]
certified asbestos worker

II. On the Job Training (Other Sites, This Site)

~~[illegible]~~ ASARCO – [illegible] hrs

III. Hazardous Waste Site Experience (Any Site)

whyco
churchill asbestos removal
380 hrs.

IV. Evaluation of Training and Experience for Work on This Site

~~Good~~ Health hazards limited to asbestos & to certain [illegible]. Based on training for asbestos removal & additional training [illegible] this worker qualified [illegible] job

EMPLOYEE NAME: Michael Grimes

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Washington Asbestos Certification

32 hrs.

II. On the Job Training (Other Sites, This Site)

ASARCO — has been provided training on arsenic, lead, & respirators as previous Asarco employee

III. Hazardous Waste Site Experience (Any Site)

ASARCO — 3 month

IV. Evaluation of Training and Experience for Work on This Site

Health hazards limited to asbestos and to certain extent arsenic. Based on training for asbestos removal and training & experience at Asarco, this worker qualified for job.

EMPLOYEE NAME: ANGELITO CAYLAO → Roberts

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

WASHINGTON ASBESTOS CERTIFICATION
32 hrs. course

II. On the Job Training (Other Sites, This Site)

ASARCO SITE — has been provided training on arsenic, lead & respirators as previous Asarco employee.

III. Hazardous Waste Site Experience (Any Site)

ASARCO — 14 years in Arsenic & Roaster depts.

IV. Evaluation of Training and Experience for Work on This Site

Health hazards limited to asbestos and to certain extent arsenic. Based on training for asbestos removal & prior training & experience at Asarco this worker qualified for job.

EMPLOYEE NAME: Walter A. O'Meaky — Roberts

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Wash. Asbestos Certification - 32 hrs.

II. On the Job Training (Other Sites, This Site)

A.S.A.R.CO Site - has been provided training on arsenic, lead & respirators as previous Asarco employee.

III. Hazardous Waste Site Experience (Any Site)

A.S.A.R.CO - 18 1/2 yrs. in Steel Shop, Cothrell, roasters.

IV. Evaluation of Training and Experience for Work on This Site

Good — Health hazards limited to asbestos & to certain extent arsenic. Based on training for asbestos removal & previous training & experience at Asarco, this worker qualified for job.

EMPLOYEE NAME: WAGNER RICHARD Roberts

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training neces-sary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

WASH. TRAINING — [illegible] worker — 32 hrs

II. On the Job Training (Other Sites, This Site)

ASARCO — has been provided training on arsenic, lead and respirators as previous Asarco employee.

III. Hazardous Waste Site Experience (Any Site)

ASARCO — 5 yrs!

IV. Evaluation of Training and Experience for Work on This Site

Work at ASARCO 5 yr.

WASH. CERTIFICATION — Health hazards limited to asbestos and to certain extent arsenic. Based on training for asbestos and previous training [illegible] qualified for job

EMPLOYEE NAME: DAVID GAMEZ — Robert

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

James L Groves Health Hazard Management Division Qualified Asbestos Worker certification course, certified in Washington state. Completed 32 hrs training 8

HAZARDOUS WASTE SITE

II. ~~On the Job Training~~ (Other Sites, This Site)

Boise State employment building Boise Idaho 1-86
Washington Water and Power steam plant Spokane Wa 6-8
Bonneville Power Administration ample bldg Vancouver Wa 11-8
Washington Athletic Club 4th floor Seattle Wa 12-86
Western State Mental Hospital Tacoma Wa 5-85

ON THE JOB TRAINING

III. ~~Hazardous Waste Site Experience~~ (Any Site)

Churchill High school 7-85 Engineer On 380 hrs.
Asarco 1-87 Tacoma Wa 160 hrs

IV. Evaluation of Training and Experience for Work on This Site

as far as the asbestos goes, I am well prepared but as for the arsenic and the experience I had here has helped. Health hazards limited to a certain extent arsenic. Basic training for asbestos removal & additional training on arsenic, this worker qualified for job.

TABLE OF CONTENTS

POWER MASTER, INC.

Specialists in Industrial Cleaning

COMPANY SAFETY POLICY
DECEMBER 20,1985

INJURIES TO EMPLOYEES CAN BE PREVENTED!!

It is the intent of management to provide a safe and healthful work environment for all our employees. It is firmly believed that an active Safety and Health Program is essential to insure the welfare of our employees. It is recognized that the Safety and Health is a responsibility of and under the direction of the management of Power Master, Inc. We feel the best safety device in any program is a safe worker, and all employees are expected to conform to the Safety and Health Regulations as set forth by management.

Safety and Health in all departments is a supervisory responsibility and must be planned into and made a part of every job assignment. For any program to be successful it must be planned. The plan at Power Master is safety participation at all levels and from all departments. We will enhance our safety effort through safety committees, training, self awareness and correction and continued effort on everyone's part.

Your personal attitude and personal commitment to safe and healthful practices on and off the job are keys to a successful program.

PRESIDENT

VICE PRESIDENT

10401 N.E. Marx St. • Portland, Oregon 97220 • 503/252-3493

POWER MASTER, INC.

Specialists in Industrial Cleaning

SAFETY, AREAS OF RESPONSIBILITY

MANAGEMENT LEVEL

Good control of safety requires that responsibility and authority be placed with someone. Safety responsibilities should be placed and accepted as follows:

MANAGEMENT

1. State and enforce a policy on safety.
2. Provide and maintain a safe work place and work environment.
3. Prescribe safe work practices and procedures.
4. Provide adequate training and competent supervision.
5. Designate responsibility and delegate authority to supervision.

SUPERVISORY

1. Train personnel in proper on the job work practices.
2. Insure that proper practices are followed.
3. Investigate all accidents for causes.
4. Take immediate corrective action when unsafe conditions or acts are observed.
5. Maintain safe equipment, tools and environment.
6. Be consistent and fair to all employees and demonstrate safe work practices and set positive examples.

EMPLOYEE

1. Observe prescribed work practices and rules.
2. Report any known hazards to your immediate supervisor as soon as possible.
3. Report injuries as soon as possible.
4. Use and maintain protective devices and personal protective equipment.

12-26-85

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POWER MASTER, INC.
Environmental Services

GENERAL WORK RULES

Violation of the following work rules will be subject to disciplinary action.

1. Falsification of time cards.
2. Theft or damage to company property.
3. Possession of firearms.
4. Refusal to submit to lunch box or tool box inspection.
5. Drinking, possession of, or under the influence of alcohol on the job site.
6. Possession or under the influence of drugs not prescribed by a Doctor.
7. Leaving the job site during working hours without the approval of your supervisor.
8. *Fighting—Horseplay—Insubordination.*
9. Early quitting at lunch or at end of shift.
10. Failure to observe and obey posted vehicle speed limits, etc. at job sites and during travel on public highways.
11. Failure to attend mandatory meetings (safety, production or crew, etc.)
12. Unsatisfactory quality or quantity of work performed.
13. Loafing or sleeping on the job.
14. Gambling.
15. Unauthorized use of company property, including vehicles.
16. Smoking in unauthorized places at job sites.
17. Poor or irregular attendance, including excessive tardiness.
18. Failure to report a known safety hazard to your supervisor.
19. Failure to cooperate in accident investigation.
20. Failure to report any injury within 24 hours.
21. Use of abusive language or gestures.
22. Sexual or racial harrassment of others.
23. "All employees of Power Master, Inc. may be terminated without notice and without cause. The following list is advisory to you that conduct described herein as well as any other conduct will be considered in making a decision to terminate. Thus, you are hereby notified that you have no contractual right to be informed of the reason for involuntary termination of employment."

Ronald F. Van Lom, President

Kenneth M. Crevier, Vice-Pres.

Curt Coffey, Safety Director

Date_____

I have discussed, read and fully understand the work rules and have been supplied a copy there of.

Employee

Social Security No.

POWER MASTER, INC.

Specialists in Industrial Cleaning

TITLE: DISCIPLINARY PROCEDURE FOR VIOLATION OF SAFETY & WORK REGULATIONS

DATE: DECEMBER 20, 1985

RESPONSIBILITY

It is the responsibility of the immediate supervisor to insure compliance with this procedure.

PROCEDURE

When a violation occurs, the offender's immediate supervisor shall determine what action will be taken.

Step 1. Instruct the offender in regards to their action.
Step 2. Reprimand the offender with a written warning that disciplinary action will follow if violations continue.
Step 3. When violations continue immediate suspension will be enacted. Supervisor will immediately notify management for final determination.

THE FOLLOWING GUIDELINES WILL BE USED TO DETERMINE WHAT ACTION TO TAKE

1. If the offender's violation did not represent an immediate danger of injury or equipment damage, he shall be instructed on the unsafe act. (Make supervisor note)

2. If the offender's second violation did not represent an immediate danger of injury, or equipment damage, he shall be issued a written warning. The warning will specify the violation in particular.

3. If the offender's third violation did not represent an immediate danger of injury, or equipment damage, he shall be issued a written warning. The warning will specify the violation in particular. The supervisor will inform offender that the next violation may lead to suspension or termination.

4. In any case of violation involving immediate danger or injury and/or property damage the offender will be subject to immediate termination, the supervisor will say to the violator "I'm suspending you indefinitely for violation of a safety rule." The supervisor will will then state the violation and relieve the employee of his duties.

Supervisor will inform Department Head as to the action taken.

CC:lp

Ronald F. Van Lom - President

Kenneth Crevier - Vice-President

Curt Coffey - Safety & Health Director

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POWER MASTER, INC.
Environmental Services

DISCIPLINARY ACTION FOR VIOLATION OF WORK RULES

Date _____

Employee's Name _____

Date of Violation _____ Time _____

Nature of Violation _____

_____

_____

_____

Discipline Issued _____

_____

Warning Regarding Future Violations _____

_____

_____

_____

_____

_____ _____
Signature of Supervisor Date

Employee Acknowledgement: I have received a copy of this warning and understand its content and meaning.

_____ _____
Signature of Employee Date

White—Personnel File Yellow—Employee Pink—Supervisor

POWER MASTER, INC.

Environmental Services

FEBRUARY 3, 1987

COMPANY SAFETY COMMITTEE PROGRAM (REVISION)

PURPOSE:

To establish and maintain a line of communication between management and hourly employees in the area pertaining to the safety and health of PMI employees and it's customers and the public.

OBJECTIVES:

A. To insure that safety and health remain an important part of PMI operations.

B. To implement a system of involvement and participation to all employees in developing and practicing accident prevention methods.

C. To initiate the appropriate, corrective action to improve the safety performance and awareness at PMI.

STRUCTURE:

A. One person from each department will be assigned as the safety representative for that department.

B. The manager will chair the committee meetings on a regularly scheduled basis.

C. The safety director will serve as the recording secretary and distribute those minutes to the committee members.

MANAGEMENT AND HOURLY EMPLOYEE MEETINGS:

A. Meetings will be scheduled for every other Friday at 7:30 A.M. The meetings will not exceed 30 minutes.

B. Attendance will be mandatory unless a member is excused by the chairman.

115 V Street • Vancouver, WA 98661 • 503/257-8801 • 206/694-5012
37405 Pacific Hwy. South • Federal Way, WA 98003
Tacoma Federal Way (206) 927-4300 • Seattle, WA (206) 838-7700

C. In the absence of the chairman, the safety director will serve as chairman unless the chairman appoints someone else during his absence.

D. Discuss in the meetings, the ideas and view points of the workers.

COMMITTEEMAN RESPONSIBILITIES:

A. Observe and discuss with the job supervisor any unsafe acts or conditions encountered on the job or in the shop.

B. Report immediately any unsafe tools, equipment, or acts to the supervisor in charge for corrective action.

C. Assist crews and supervision in maintaining good housekeeping practices on job sites as well as in the shop areas.

D. Upon receiving the minutes from the safey committee meeting, the safety committee member will schedule a crew safety meeting.

E. The meetings should be scheduled prior to crews leaving the shop area for job sites.

F. Meetings should not exceed 10 minutes in length and an attendance sheet and meeting notes be made out and turned in to the safety director and Reginal manager for review.

CORRECTIVE ACTION:

Action to be taken will be determined by the office manager through priorities. All items may not be addressed for immediate corrective action.

NOTE:
An update will be posted as to what action has been taken, etc.

Curtis Coffey
Safety Director

Wayne Welty
Northwest Regional Manager

POWER MASTER, INC.

Specialists in Industrial Cleaning

NEW EMPLOYEE ORIENTATION

PURPOSE

To establish and maintain a uniform employee orientation effort. To inform new employees of company policies and procedures so that they will better understand company operations, etc.

OBJECTIVE

To better educate all employees in the operation and intent of Power Master and to demonstrate positive company attitude.

DEPARTMENT HEADS RESPONSIBILITIES

It will be the responsibilities of department heads to insure this policy through their supervision.

SUPERVISORY RESPONSIBILITIES

The supervisor of a new or returning employee will be responsible for scheduling classes and seeing to it that employees attend.

SAFETY DEPARTMENT RESPONSIBILITIES

Orientation classes will be conducted by Safety Department when notified that new employees have been hired. General safety and health items will be covered in the class. This class is only orientation. On the job training by supervision is the key in developing a good safety minded employee.

Ronald F. Van Lom - President

Kenneth Crevier - Vice-President

Curt Coffey - Safety & Health Director

12-30-85

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POWER MASTER, INC.

Specialists in Industrial Cleaning

NEW EMPLOYEE ORIENTATION OUTLINE

A) INTRODUCTION

1) Instructor History
2) Company History
3) Type of Service Company Provides

B) WORK RULES

1) Cover General Work Rules
2) Safety Responsibilities
3) Disciplinary Action Program

C) PERSONAL PROTECTIVE EQUIPMENT

1) Respirators (Fit Testing)
2) Protective Clothing
3) Eye, Face and Ear Protection
4) Shoes (Blasting Metatarsals)

D) RIGHT TO KNOW LAW

1) Requirements
2) Materials

E) INJURIES

1) Report Any Injury Immediately to Your Supervisor
2) Failure to Report (Discipline or Denial)
3) Written Doctor's Release Returning to Work After Injury

I have received and understand the above information.

Company Representative

Employee Signature

Date

12-30-85

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POWER MASTER, INC.

Specialists in Industrial Cleaning

February 19, 1986

SAFETY MEETING POLICY

PURPOSE: To establish a program of regularly scheduled safety meetings at all levels, to promote, communicate and maintain safety awareness and involvement for all employees.

EXECUTIVE SAFETY COMMITTEE

The Executive Safety Committee personnel will meet on a monthly or bi-weekly schedule to determine, discuss and promote new and existing programs, injuries, accidents, etc. Business will include the review of topics brought to the attention of the Executive Committee through minutes from the Employee Safety Meetings. The Executive meetings will be documented in the form of minutes and made available to hourly employees by means of posting or for review in their safety meetings. Bring up at the Meeting

EMPLOYEE SAFETY MEETINGS

Employee safety meetings will consist of all hourly employees meeting with their immediate supervisor to discuss any safety and health problems they feel need attention. It will be the responsibility of the supervisors of departments to insure at least monthly or bi-weekly safety meetings, or as needed. All meetings will be documented in the form of minutes. The minutes will be forwarded to the top line managers for review in the Executive Safety Meeting. These minutes will be part of the business during the Executive Meeting. The Executive Committee will decide corrective measures and reflect their intent in the Executive Committee minutes. One hourly employee will be selected from each department to attend and participate in management worker safety meetings.

NOTE: Attendance at all scheduled meetings is mandatory. Failure to attend without permission may lead to disciplinary action.

Ronald F. Van Lom, President

Kenneth M. Crevier, Vice-President

Curt B. Coffey, Safety/Health Director

5303 Northeast 105th Avenue . Portland, Oregon 97220 . 503/257-8801

POWER MASTER, INC.

Specialists in Industrial Cleaning

HAZARD COMMUNICATION PROGRAM

PURPOSE AND SCOPE

The Hazard Communication program is intended to ensure that all Power Master, Inc. employees and all contractor employees are trained in any known chemical type hazards to which they might be exposed. This program explains training and labeling requirements, documentation and access to information. This program and information is available to all employees of Power Master, Inc.

PURCHASING RESPONSIBILITIES

M.S.D.S. refers to Material Safety Data Sheets

1- Any person who purchases or who may purchase for someone else will order a M.S.D.S. with that order when it envolves chemicals. (Liquid solvents, coatings or chemicals or in powder form)

2- Upon receipt of the M.S.D.S. it will be forwarded to the attention of the Safety Director for review etc.

EMPLOYEE INFORMATION AND TRAINING

New and exisiting employees will be educated in safety meetings and during new employee orientation. Part of the training will include the following:

1- Federal and State hazard communication laws.

2- Hazardous chemicals that may be present in their work area or at their job assignment.

3- The location of the M.S.D.S. file for their needs.

4- Safety steps employees can take to recognize and mimimize their exposures.

CONTRACTORS

1- All contracts that Power Master, Inc. is awarded will include a Hazard Communication clause. The clause will require the customer to inform in writing and to educate PMI employees of the hazards envolved at the job site.

2- Prior to work starting the representative from Power Master, Inc. will ensure that the contract agreement has been met regarding M.S.D.S. and hazardous communication.

M.S.D.S. TRAINING

1- Manufactures (name)
2- Hazardous ingredients
3- Physical data
4- Fire and explosion hazards
5- Health hazard information
6- Reactivity data
7- Spill or leak procedures
8- Special protection information
9- Precautions

Ron Van Lom - President

Kenneth Crevier - Vice Pres.

Curtis B. Coffey - Safety & Health Director

CONTRACT

POWER MASTER, INC., hereinafter "Seller" and _____, hereinafter "Buyer" agree as follows:

1. That Seller will provide specific services, including materials necessary thereto, to Buyer in accordance with the terms of a proposal dated _____, a copy of which is attached hereto and is made a part of this agreement.

2. Performance by Seller shall commence on or about _____ and shall be completed on or about _____.

3. Buyer will pay Seller on the following schedule: _____

_____

_____

_____

4. Unless otherwise contained in Exhibit A hereto, Buyer represents and warrants that there are no undisclosed toxic or hazardous substances constituting a health hazard that will in any way be exposed to Seller's workers in performance to this contract. Should any of Seller's workers suffer damage on account of being exposed to toxic or hazardous substances at Buyer's premises while working on this contract, Buyer will indemnify and hold harmless Seller and its employees from all consequences thereof.

Health hazard is defined as:

A chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in persons exposed thereto. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucuous membranes.

5. There are no implied warranties of any kind. Seller expressly warrants that the services required by this contract will conform to workmanlike standards and that materials used will be free of defects.

Upon completion and acceptance of the job by Buyer, which acceptance will not be arbitrarily withheld, the express warranties are satisfied.

6. If Buyer fails to pay any sum then due to Seller, the Buyer agrees to pay a **LATE PAYMENT CHARGE** of 1½% per month (19.56% annually) to Seller on all such sums until paid.

7. Should a dispute arise over the performance of either party to this contract, and a suit or action is filed, the prevailing party shall be entitled to collect from the other reasonable attorney fees both at the trial court and in all appellate courts. Should the Seller incur expenses to collect money from the Buyer, even though no lawsuit is filed, Buyer will reimburse Seller for such reasonable expenses.

8. Anything to the contrary, notwithstanding, Seller's performance hereunder is subject to acts of God, labor strikes or any other unforseeable event that is beyond the control of Seller.

9. This is the entire agreement. Any changes hereto become valid and enforceable only if in writing and signed by both parties.

10. Each person signing represents that he/she has authority to do so on behalf of the party whose name appears above his/her signature.

11. Buyer acknowledges receipt of a copy of this contract.

DATED this _____ day of _____, 19____.

SELLER:

POWER MASTER, INC.

By

Title

BUYER:

_____
Company

By

Title

POWER MASTER, INC.

Specialists in Industrial Cleaning

Date: May 9, 1986

Name: Oregon Steel Mill
Address: P.O. Box 2760
City: Portland, Oregon 97208

Dear

Under newly adopted State and Federal regulations, workers have a right to know if they are exposed to any toxic or harmful substance that may pose a health hazard. This, of course applies to our customers as well as yours.

We strive to abide by the regulations and to protect our workers. As service contractors, we respond and work at the customer's site and cannot be as knowledgeable about the potential risks as the customer. Written contracts for one-time or occassional customers reflect that the customer bears sole responsibility for workers injured by or exposed to any harmful substance while on their site.

Calls are often received from established customers and crews are dispatched on verbal communication without a written contract. In these circumstances, the customer must still accept the same sole responsibility to advise us of potential exposure and accept responsibility for workers injured or exposed to any harmful substance.

While your risk may be minimal or non-existant, we hope you appreciate our concern in abiding by applicable regulations and to protect our workers.

Reference is made to State of Oregon Worker's Compensation Department publication titled "Hazard Communication", dated 11-25-85. For other states please contact your state regulatory agency or O.S.H.A.

5303 Northeast 105th Avenue . Portland Oregon 97220 . 503/257-8801

POWER MASTER, INC.

Specialists in Industrial Cleaning

HAZARD COMMUNICATION TRAINING CERTIFICATION

I have received Hazard Communication Training as described in the Company Hazard Communication Program. The training was conducted on _____ and was of the following type (check appropriate type):

- ☐ 1. Initial Introduction to Program
- ☐ 2. New Chemical or Substance
- ☐ 3. Nonroutine Hazardous Task
- ☐ 4. Periodic Refresher Training

I have been instructed that I am to follow all related safety procedures outlined in this training

_____ Employee Name (Print)

_____ Employee Signature

_ _ _____ Social Security Number

I hereby certify that the above-named employee has been provided with Hazard Communication Training on _____.

CURTIS B COFFEY Instructor Name (Print)

_____ Instructor Signature

10401 N.E. Marx St. • Portland, Oregon 97220 • 503/252-3493

POWER MASTER, INC.

Specialists in Industrial Cleaning

January 30, 1986

CONFINED SPACE ENTRY PROCEDURES

I. PURPOSE

To inform managers, supervisors and employees of the hazards associated with the entering of confined spaces and to establish guidelines to insure safety of employees.

II. DEFINITION

Confined Space - An enclosed space such as a pit, manhole, tank, vault, tunnel, storage tank, boiler, ventilation exhaust duct, sewer, or where entry, exit, visual or audible contact between the occupant (s) and outside attendant (s) may be difficult.

III. HAZARDS

A) O_2 (Oxygen) Deficiency: An atmosphere that contains less than 19.5% of oxygen. (Note: Normal air contains 20.9%).

B) Combustible Atmosphere: An atmosphere that may explode if a source of ignition is introduced.

C) Toxic Gases or Vapors: An atmosphere that contains contaminents that even in low concentrations can cause serious injury or death.

Examples include asphyxiants like methane, carbon monoxide and irritants like hydrogen, sulfide (H_2S), sulfur dioxide (SO_2) or nitrogen dioxide (NO_2).
NOTE: The above may exist in combination or individually.

IV. PREREQUISITES FOR CONFINED SPACE ENTRY WORK

A) First Aid Training/Equipment

1) There will be at least two people trained in S.C.B.A., cardiopulmonary resuscitation and basic first aid at each job site. All employees will know where first aid equipment is located and where medical help or emergency assistance can be obtained.

5303 Northeast 105th Avenue . Portland, Oregon 97220 . 503/257-8801

B) Training

All employees involved with confined space entry work shall be instructed or trained in the following:

1) Emergency entry/exit procedures
2) Respirators
3) Lock-Out/Tag-Out procedures
4) Rescue training skills and equipment (S.C.B.A.)
5) Proper work practices (on the job training)

C) Pre-Entry Work Practices

A Safe Work Entry Permit, will be filled out prior to space entry.

Once testing has indicated the immediate area within the space to be safe then more remote areas are to be tested.

1) Atmospheric Testing - There will be atmosphere testing done in the following order prior to the entry of any kind of confined space to ensure that the atmosphere is safe, that existing hazards have been evaluated, or if purging or ventilation precautions are needed.

   a) Oxygen Testing - The oxygen level will be determined first. The percentage of oxygen shall be no less than 20.9% or greater than 25%.

   b) Flammable/Explosive Testing - This testing will be done to determine what concentration of combustible or flammable gases exist or if the upper or lower explosive limits are being approached.

   c) If toxic materials are suspect then a certified chemist or hygenist will determine and document a safe means to eliminate toxic problems. Prior to entry it will be rechecked to insure a safe atmosphere exists.

2) Equipment used for atmospheric testing shall be calibrated before each use. Records of this calibration shall be documented on the work entry permit.

D) Warning Signs

Signs shall be posted that identify the facts that:

1) A confined space exists
2) Entry is by permit only
3) Specific safety equipment is required

NOTE: In addition to the above information the location and phone number at the local Emergency Services shall be posted in the area. Emergency numbers will be posted on "Safe Entry Form".

E) Purge or Ventilate the space using the following guide:

All electrical equipment shall meet or exceed requirements of the NEC (National Electrical Code) or the NFPA (National Fire Protection Association). Continuous ventilation will be part of all confined space operations where conditions inside the space may change as work progresses. Atmospheric testing shall be continuous when necessary to ensure that acceptable levels of oxygen and flammable limits are achieved and maintained.

If the confined space is partially blocked, precautions shall be taken to provide workers with respirable air for the time necessary to exit. (Five minute emergency escape equipment).

F) Isolation - Tag-Out/Lock-Out Procedures

Lines feeding an oxygen deficient/flammable or toxic substance into the atmosphere shall be:

- physically disconnected,
- physically blocked, or
- blanked off.

1) Blanks used to seal lines shall be capable of withstanding the maximum working pressure as load of the line, to ensure a leak proof seal.

2) Shut off valves shall be locked in a closed position and tagged for identification. Pumps and compressors serving these lines shall be locked out to prevent accidental activation.

3) Electrical isolation shall take place with a key type padlock with the key to remain with the person inside the confined space. If more than one person is inside the confined space each person shall place their own lock on the breaker.

4) Mechanical isolation will be achieved by owner's representative. After the blocking of mechanical parts is completed the owner's representative will notify Power Master supervision the isolation has been completed.

G) Tools and Equipment

1) Lighting and electrical equipment will meet all electrical and fire codes (NEC, NFC) and shall be of explosion proof design, equipped with guards. Lights will be hung by the electrical cord that is specifically designed for the purpose.

2) Only compressed gas cylinders that are a part of self-contained breathing apparatus or resuscitation shall be used with a pressure relief valve outside the confined space.

H) Personal Protective Equipment

Required to be worn in a confined space shall include:

1) Eye and face protection, goggles if eye irritating chemicals or particulates are present.

2) Foot protection - steel toed rubber boots if hydro-blasting or in a wet area.

3) Full body work clothing, i.e., rain wear suitable for protection against irritating materials.

4) Hearing protection when hydro-blasting, vacuuming or when noise exposure levels may be exceeded. NOTE: When an emergency signal is sounded all work will stop.

5) Hand protection - suitable for protection against toxic/irritating materials.

6) Safety harness with lifelines:

a) Lifelines and safety harnesses shall be capable of withstanding a static load of 4,000 lbs.

I) Respiratory Protection

Selection shall be based on atmospheric conditions that exist in the confined space, and in accordance with the Respirator Protection Program.

J) Tank Cleaning

1) Initial cleaning shall done from the outside if at all possible.

2) If the confined space contains a flammable atmosphere above the UFL, it shall be ventilated to remove the flammable atmosphere.

3) Procedures shall be adopted to handle the hazards created by cleaning.

V. ENTRY PROCEDURES

A) Employees will not enter a confined space that has been sealed or unventilated, until that space has been checked, ventilated, rechecked for oxygen and explosive levels, and found to be within acceptable limits.

1) If ventilation is supplied via a compressor then the location of the air intake shall be such to prevent the contamination of the air by carbon monoxide or other hazardous materials or gases. If a compressor is used to provide air to workers the tools, hoods, respirators or masks the following safe guards will be installed:

a) A trap and carbon filter to remove oil, water, odor and scale.

b) A reduced diaphram or valve to reduce pressures down to acceptable pressure levels for respiratory equipment.

c) High temperature shut down device and alarm in the event of overheating.

d) A pressure release shut down valve.

2) Appropriate protective clothing.

3) Two people trained and equipped with SCBA, harness belt, lifeline and protective wear to assist the person inside in the event of an emergency and to hold the safety line.

NOTE: There should be agreed upon signals for immediate rescue action between the first and second persons.

4) A third rescue person is nearby able to seek immediate help in the event of an emergency and assist in the removing of the first person. A fourth person is nearby able to seek help.

B) When an employee enters a confined space that has been tested and found acceptable, entry may take place.

C) Any time confined space entry is taking place, sufficient natural and/or mechanical ventilation shall be provided at all times in order to provide fresh air and maintain the atmosphere within permissible limits for explosive or toxic materials while individuals are in a confined space.

THIS PROGRAM TO TAKE EFFECT IMMEDIATELY.

Kenneth M. Crevier, Vice-President

Ronald F. Van Lom, President

Curt Coffey, Safety & Health Director

POWER MASTER, INC.

Environmental Services

Local Fire Dept _____ - _____

Ambulance _____ - _____

Hospital _____ - _____

LOG OF INSPECTIONS AND TESTS BY COMPETENT PERSON

Job _____ Location _____

Space	Operation	Date	Time	Test Results		Instructions	Init.
				Oxygen %	Flammable Levels		

White Copy—Post

Signature

POWER MASTER, INC.

Specialists in Industrial Cleaning

January 30, 1986

RESPIRATORY PROTECTIVE PROGRAM

I. PURPOSE

To provide appropriate and adequate training of respiratory protective equipment. To establish responsibility pertaining to the care and use of respiratory protective equipment and to remain in compliance with all regulations governing respiratory protection.

This written program was developed to define the company rules now in effect regarding the use of all respirators, where employees may be exposed to the following:

1) Dusts, Mists, Fumes, i.e., nuisance dusts
2) Organic Vapors, i.e., toluene, xylene
3) Acid Gasses, i.e., chlorine, sulfur dioxide
4) Ammonia (and methylamine)
5) Highly Toxic Particulates, i.e., Lead (Dust/Fume)
6) Asbestos
7) Confined Space Entry Work

The regulations contained herein are not optional for the employees. The company considers this policy mandatory and a condition of employment for each individual.

II. AVAILABILITY OF RESPIRATORS

Each employee that requires a respirator will be issued one at the company's expense with replacement parts, cartridges and filters upon request. The following types of respirators are available:

1) Disposable air purifying respirators
2) 1/2 Face air purifying respirators
3) Full Face air purifying respirators
4) Full Face powered air purifying respirators
5) Self-contained breathing apparatus
6) Supplied air respirators

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III. SELECTION/USE OF RESPIRATORS

Power Master's job supervisor along with plant safety personnel will identify the hazards that will require respiratory protective equipment. The proper equipment will then be selected by the job supervisor and safety director.

Each employee that requires a respirator shall wear an approved respirator properly fitted at all times when exposures may warrant it. The following are examples of operations that require respiratory protection:

1) Removing asbestos (respiratory protection is required at all times)
2) Vacuuming bag house dust.
3) Burning or Welding.
4) Cleaning with Solvents, etc.

Only approved type respirators will be used at all Power Master's facilities and operations.

The available respirators have the following limitations:

1) Air purifying and powered air purifying respirators do not provide oxygen and are not to be used at atmospheres containing less than 19.5% oxygen or atmospheres considered immediately dangerous to life or health (IDLH).

2) Air supplied respirators without a five minute escape bottle are also not to be used in atmospheres containing less than 19.5% oxygen or atmospheres considered (IDLH).

IV. TRAINING OF EMPLOYEES

Employees will be trained on how to use and maintain a respirator. This training will be given by the Safety Department or supervisory personnel to employees before their first job assignment.

Employee's proof of the training and instructions received shall consist of the following: In addition to the training and instruction received, the respirator user must have read, understood and be able to apply the contents of this respirator program in the daily use, care and safekeeping of the said respirator.

Copies of the program in addition to specific use and fitting instruction shall be posted.

V. FITTING OF RESPIRATORS

In order to ensure a good face seal, the following rules must be observed:

1) Adjust face piece properly, simply position the chin firmly in the chin cup and manually shift rubber mask until the

most comfortable position is located. Make adjustments in the head band and do not break the face seal. Modification to the respirator or straps will not be made.

2) Proper fit must be checked each time the respirator is worn according to the manufacturer's instructions. Respirators shall not be worn when projections, e.g., temple pieces on glasses, a skull cap, sideburns or beards, under the face piece prevents a face seal. Employees who wear a respirator for comfort purposes or as a job requirement are to be clean shaven.

3) Employees will be tested to ensure a good fit. Tests utilizing either Saccarhin or Isoamyl Acetate will be used to check respirator fit.

VI. MAINTENANCE OF RESPIRATORS

Respirators shall be cleaned after each use and placed in a plastic bag and stored in the container proved for this purpose.

At the end of each use, respirators will be completely cleaned and disinfected.

1) Wash the respirator in a warm (140-160° F) aqueous solution or a germiciadal detergent. The inside of the respirator face piece and parts may be scrubbed gently with a cloth or soft brush in order to make sure all foreign matter is removed from surfaces.

2) After washing and disinfecting the respirator, rinse the respirator in water and allow to dry.

3) After the respirator is dry reassemble element and other parts.

4) Store the respirator in the container provided for this purpose, report any malfunction or bad parts to your supervisor for correction.

Each worker assigned to use a respirator shall maintain and routinely inspect it before and after each use. Respirators will be inspected on a periodic basis by the manager, shop foreman, superintendent, or Safety Director to assure that they are kept clean and in satisfactory working condition. Respirator inspection shall include:

1) Rubber Face Piece - check for:
   a) Excessive dirt
   b) Cracks, tears or holes
   c) Distortion
   d) Cracked, scratched or loose fitting lenses

2) Head Straps - check for:
   a) Loss of elasticity, broken buckels

3) Filter Elements - check for:

a) Proper filter for the hazard
b) Missing or worn gaskets
c) Cracks or dents in filter housing
d) Deterioration of harness

4) Inhalation/Exhalation Valves - check for:

a) Dirt, cracks, tears, or distortion in the valve material or valve seat
b) Missing or defective valve cover

5) Air Supply System - check for:

a) Breathing air quality
b) Breaks or kinks in air supply hoses and end fitting attachments
c) Tightness of connections
d) Proper setting of regulators and valves
e) Locking devices on all hose connectors

NOTE: Only the original parts will be used in the maintenance of all respiratory equipment.

If an employee has any physical or health reasons that might be detrimental when wearing a respirator, it will be their responsibility to inform management.

THIS WRITTEN RESPIRATORY PROTECTIVE PROGRAM SHALL TAKE EFFECT IMMEDIATELY.

Kenneth Crevier, Vice-President

Ronald F. Van Lom, President

Curt Coffey, Safety & Health Dir.

POWER MASTER, INC.

Specialists in Industrial Cleaning

PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT POLICY

PURPOSE

The purpose of this policy is to outline minimum requirements regarding work clothing and personal protective equipment. These are minimum requirements.

WORK CLOTHING REQUIREMENTS

1) Clothing shall be worn which is appropriate to the work being performed and conditions encountered.

2) Loose fitting clothing such as lapels, sleeves, cuffs, will not be worn when working on or around moving machinery or machinery parts.

3) Clothing will be in good repair to provide maximum protection against minor burns, cuts, abrasions, etc.

HEAD PROTECTION

1) All employees are required to wear approved safety hardhats when exposed to possible head injuries or when mandatory at job sites.

2) Employees whose hair length is not protected by a hard hat will use a hair net or other means to keep hair neatly in place against the head and under the hat.

EYE AND FACE PROTECTION

Hearing protection will be worn when engaged or exposed to the following:

1-Operating blast or vacuum equipment
2-Grinding or chipping or when exposed to high frequency noise levels. (pain)

In some cases ear plugs and muffs may be necessary to ensure adequate protection.

FOOT PROTECTION

Purpose

The purpose of this policy is to outline the minimum requirements in respect to work type shoes. These are minimum requirements subject to change pending exposures encountered on the job or in shop areas.

REQUIREMENT

Steel toed shoes will be mandatory when engaged in the following operations.

1) Hydro-Blast
2) Jet Lance
3) Vacuuming
4) Shop Related Projects
5) Employees engaged in asbestos removal operations will be exempt from wearing steel toed shoes unless specified by supervisor or by customer on site.

NOTE

Work shoes will be maintained in good working order, free from floppy soles, loose heels or holes that may expose the foot to the elements. If exposure warrants, foot protection with metatarsal guards, may be mandatory.

SPECIAL PROTECTIVE WEAR

Special protective wear will be provided by the company as needed. Special protective gear will be maintained in good working order by the employees assigned to the gear. Lost, stolen or damaged gear will be reported to the immediate supervisor as soon as possible.

NOTE

Sleeveless shirts will not be acceptable in the shop or at job sights. Long sleeve shirts buttoned at the wrist is mandatory when exposures exist, or when customers have a clothing or equipment policy, stating their requirements. Cut off pants or shorts will not be acceptable unless worn under coveralls, etc.

Ronald F. Van Lom - President

Kenneth Crevier - Vice-President

Curt Corfey - Safety & Health Director

POWER MASTER, INC.

Specialists in Industrial Cleaning

Lockout Procedures

In order to provide and maintain safe operation and maintenance of machinery, motors, electrical installations, etc. The following steps will be followed. In cases where procedural steps can not be followed immediate notification to your supervisor is mandatory.

Lockout Work Procedure

1) Alert operators or person assigned or responsible for equipment that's to be serviced. Inform them of your task and that the equipment will be locked out.
2) Before starting work on equipment make sure that it can not be engaged without your permission upon notification.
3) Prior to working on equipment install your personal padlock on the control lever, valve, etc. If it is already locked out install your own private lock. Communicate to owner of other lock your function.
4) If padlocking is not possible it is mandatory to place a sign that reads "MAN AT WORK DO NOT ENGAGE POWER". Make every effort to block an accidental engaging of power source.
5) When job is completed or at end of shift remove your tags and locks leave others as positioned.

   CAUTION: Never allow someone else to remove your lock or tags.
6) If you lose your lock key report it immediately to your supervisor.
7) Any employee observed removing locks, signs, tags or engaging power to a tagged piece of equipment is subject to immediate termination.

GENERAL

It's mandatory that these steps be complied with at all times and in all areas. No job is so small that the procedures can be waived. Failure to comply can result in immediate termination.

Roanld R. Van Lom - President

Kenneth Crevier - Vice-President

Curtis B. Coffee - Safety & Health Director

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POWER MASTER, INC.

Specialists in Industrial Cleaning

April 14, 1986

MAXIMUM WEIGHT LIFTING POLICY

PURPOSE

To establish and enforce a maximum weight limit to help eliminate possible muscle and soft tissue exposure and injury.

SCOPE

It is the intent of Power Master, Inc. management to instruct and enforce through education, observation's and continued supervision's to eliminate or greatly reduce muscle strains and injuries to their employees.

IMPLEMENTATION

In order to ensure or greatly reduce muscle and soft tissue injuries to Power Master, Inc. employees, the following rules will be effective immediately.

TECHNIQUES

A. No employees will lift more than 35 lbs. without the aid of a co-worker.

B. No employee will refuse when asked by another employee for assistance in lifting, pulling or pushing an object unless there are other possible hazards involved.

C. Lifting aids will be utilized whenever possible.

D. When three people or more are needed to move an object or load, one person will assume leadership in the effort. (Team work lift in unison)

E. Make sure that the travel path is free from tripping, slipping or falling hazards before lift is attempted.

F. Wear gloves when possible and use the palm of the hand to grasp object, as the fingers quickly lose their gripping power.

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POWER MASTER, INC.

Specialists in Industrial Cleaning

August 5, 1986

PURPOSE

The hearing conservation program's intent is to minimize noise exposure to PMI employees and to the public.

OBJECTIVE

To minimize noise exposure through education, medical monitoring, feasible cost-effective engineering controls, administrative policy, and personal protective equipment and enforcement of this policy.

RESPONSIBILITIES (MANAGEMENT)

Management's responsibilities is to develop, implement, and monitor the effectiveness of the efforts put forth in complying with the policy.

RESPONSIBILITIES (SUPERVISORY)

On line supervision will be responsible for implementing and enforcing the policy to the hourly employees. He will be responsible for providing the necessary protective equipment and ensuring that the equipment is on hand and worn when necessary. (NOTE: It is important that enforcement take place at the supervisory level).

RESPONSIBILITIES (EMPLOYEES)

Hourly employees will be expected to comply with the policy and wear and maintain their personal hearing protection equipment. Failure to do so may result in disciplinary action.

RESPONSIBILITIES (SAFETY DEPT.)

It will be the safety representative's responsibilities to monitor, educate, and coordinate by whatever means necessary to ensure that a good program is developed and maintained.

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EDUCATION

Employees will be informed through safety meetings and training with regard to noise induced hearing loss and means with which to prevent such loss.

PERSONAL MEDICAL MONITORING (AUDIOMETRIC TEST STANDARDS)

A. Audiometric testing will be done on new and existing employees and periodically thereafter while employed at PMI.

The purpose of this testing is to provide an actual measurement of the employee's hearing ability using methods which duplicate test conditions for each test.

B. Testing will be conducted by a person certified by the state using certified equipment and the results will be interpreted by a certified audiologist if needed.

C. If hearing tests indicate an employee has a significant threshold shift, he will be retested within one month. Audiometric test results will be made available to employees upon request. If a notable change occurs, the employee will be notified by letter of that change and his options.

D. Employees scheduled for a baseline audiometric test must be away from noisy exposure 14 hours prior to the test. This gives the ear time to settle at its normal threshold level for that person. Follow-up tests will then be administered annually to determine if the conservation program is working.

E. Records of audiometric tests will be retained for at least five years after termination of the employee. The record will consist of the following information:

Name of Employee
Social Security #
Location, Date, and Time of Tests
Name of Audiometric Technician
Type, Model, and Calibration date of Audiometer

GUIDELINES TO INSURE ABATEMENT (EXPOSURE LEVELS)

A. The permissible exposure level is a level of sound in which workers may be exposed to without adverse effects on their ability to hear and understand normal speech.

B. The permissible exposure level for noise that a person may be exposed to is 85 db, not to exceed eight hours.

C. For continuous noise, the ceiling level is anything in excess of 115 db. Impact/impulse noise ceiling is at or above 140 db.

GUIDELINES TO INSURE ABATEMENT (WARNING SIGNS)

Warning signs must be posted in any and all areas where the employees or the public may be exposed to 115 dbs or more. The sign will inform these people about the high noise exposure and that hearing protection is required.

Listed are the operations which require hearing protection during operation periods.

Vacuum Trucks: (1) Vacuum truck operations within 10 feet of the truck will require ear muffs. Within a 40 foot radius of the truck, plugs will be required. (2) Vacuum truck operations at the suction point will require ear plugs.

High Pressure Water: (1) High pressure water cleaning will require ear plugs at the point of operation and protection within 40 feet of the power unit.

Other Noisy Operations: (1) Grinding, rattling, or chipping may require hearing protection. These operations can create high frequency noise levels that exceed acceptable impact exposure.

Audiometric tests will be made available to any employee upon request.

Ronald R. Van Lom - President

Kenneth Crevier - Vice President

Curt Coffey - Safety & Health Director

POWER MASTER, INC.

Specialists in Industrial Cleaning

SUPERVISOR'S ACCIDENT INVESTIGATION

PURPOSE

To establish a uniform system for the investigation of all accidents resulting in personal injury that require the services of a medical doctor.

OBJECTIVE

To ensure that accidents resulting in injury or property damage be promptly and thoroughly investigated for cause and documentation.

To initiate corrective action to prevent reoccurrence.

SUPERVISORS RESPONSIBILITIES

Any significant incidents or injury accidents requiring the services of a medical doctor will be investigated immediately or on the day the accident is reported to the supervisor.

The supervisor will immediately report to management and his department head all injuries requiring ambulance service.

MANAGEMENT RESPONSIBILITIES

Management personnel upon request of investigating supervisor will assist in the accident investigation.

Management will provide assistance in developing appropriate corrective action.

ACCIDENT INVESTIGATION FORM

Upon completion of accident form, copies will be distributed as follows:

- White Copy: To Insurance Company with Claim.
- Yellow Copy: To Safety Department - Employee File.
- Blue Copy: To Foreman's File.

Ronald R. Van Lom - President

Kenneth Crevier - Vice President

Curt Coffey - Safety & Health Director

12-26-85

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POWER MASTER, INC.

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ON-THE-JOB INJURY INVESTIGATION

Employee Injured: _____

1. Date of Injury: _____ Time of Injury: _____ A.M. _____ P.M. _____
2. Did injury occur on employer's premises or worksite? Yes _____ No _____
   List work area: _____
3. What work was employee doing when injured? _____
   _____
4. How did the injury occur? Describe body motion such as walking, running, sitting, caugl off balance. Did the employee slip, trip, fall? _____
   _____
5. What part of body injured? _____
6. If equipment was involved, in what way did it contribute? _____
   _____
7. List witnesses: _____
   _____
8. Did the employee have previous injuries or conditions prior to accident? Yes _____ No _____
   Explain: _____
   _____
9. Was the injury caused by faulty equipment? (Check as soon as possible to make sure it i as the employee described.) _____
   _____
10. Was the injury caused by another person not employed by your firm? If so state:
    Name: _____ Address: _____
11. What corrective action was taken to prevent similar injuries from occurring in the future? _____
    _____

Employer's Comments:

_____

_____

_____

ite Copy - To Insurance Co. w/Claim
low Copy - To Safety Dept. - Employee File
e Copy - To Foreman's File

Supervisor: _____

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POWER MASTER, INC.

Specialists in Industrial Cleaning

February 26, 1986

CLAIMANT CONTACT POLICY

PURPOSE:

To establish and maintain a line of communication with employees who have been injured on the job and are presently missing time because of that injury.

IMPLEMENTATION:

On a periodic basis a company representative should make an effort to contact an employee who is off and missing time from an on the job injury. This may be accomplished by personal contact or by telephone. Documentation is important in the contact program so that a record can be kept and the employee's progress can be monitored on a regular basis.

GOAL:

By contacting injured employees two areas of interest can be accomplished. One area will be to demonstrate that the company is concerned about the employee and improve the company/employee relationship. The other area is to keep the lines of communication open so that we might get the worker off the injured list quicker and back to work. If we show no interest in the worker's well being he will possibly have little interest in returning to work. Contact should be made as soon as possible so that the company's interest in the employee is demonstrated.

Curt Coffey
Safety & Health Director
Power Master, Inc.
Portland OR

CC/rg

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CLAIM NO._____

CLAIMANT CONTACT

INSTRUCTION: THE CLAIMANT IS TO BE CONTACTED BY PHONE OR PERSONALLY, THE FOLLOWING AREAS ARE TO BE DISCUSSED AND COMMENTS NOTED.

NAME:_____ ACCIDENT DATE:_____

PHONE NUMBER:_____ DATE OR TIME CALLED:_____

GET HIS DESCRIPTION OF ACCIDENT, WHO HE REPORTED TO FIRST, (WITNESSES NAMES, SUPERVISOR)_____

_____

_____

_____

_____

WHO IS CLAIMANT SEEING FOR MEDICAL CARE._____

_____

TREATMENT OR MEDICATION_____

_____

IS CONDITION IMPROVING?_____

_____

RELEASE DATE:_____

HAS CLAIMANT EVER INJURED THIS AREA BEFORE?_____

_____

WHEN?_____

WHO_____

LENGTH OF TIME LOSS_____

ANY PARTIAL PERMANENT DISABILITY_____

ADDITIONAL COMMENTS:_____

_____

_____

_____

_____

POWER MASTER, INC.
Environmental Services

PMI SAFETY TRAINING

SUBJECT: INORGANIC ARSENIC, EMPLOYEE INFORMATION TRAINING

1. Definitions
2. Authorized Person
3. Exposure Limits
4. Notification of Use
5. Regulated Areas
6. Demarcation Areas
7. Access
8. Prohibited Activities
9. Compliance
10. Respiratory Protection
11. Respiratory Selection
12. Respiratory Usage
13. Fit Testing
14. Protective Clothing
15. Eye Protection
16. Cleaning and Decontamination of Clothing
17. Cleaning and Decontamination of Footwear
18. Cleaning and Decontamination of Respirators
19. Hygiene
20. Change Rooms
21. Showers
22. Employee Question, Answer and Review of Chapter 296-62 WAC (Part G) P. 21 - P. 30.

115 V Street • Vancouver, WA 98661 • 503/257-8801 • 206/694-5012
37405 Pacific Hwy. South • Federal Way, WA 98003
Tacoma Federal Way (206) 927-4300 • Seattle, WA (206) 838-7700

EMPLOYEE SIGNATURE:	S. S. #
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____
9. _____	_____
10. _____	_____
11. _____	_____
12. _____	_____

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by POWER MASTER, INC. (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
	POWER MASTER, INC.	Federal Way, WA.	
Jack R. Jones			3/20/87
Gadon C MacPherson			3/20/87
William MacPherson			3/20/87
Steven Doffner			3/20/87
Arthur D Engel			3/20/87
Dennis L. Selby			3/20/87
Scott Wright			3/20/87

I hereby certify that to the best of my knowledge this list is current for 3-87 (month/year).

Gadon C MacPherson / Steven Doffner
Contractor Site Health and Safety Officer

TACOMA PLANT

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Jack B. Jones Contractor Signature	3-18-97	Arsenic Trioxide Curtis E. Dungey ASARCO Signature

GENERAL MEDICAL EXAMINATION:

Medical History: - Smoking & respiratory systoms history
Occupational History
Vision Testing
Blood Pressure, Pulse rate, Oral temperature
Height & weight
Urinalysis

ARSENIC MEDICAL EXAMINATION:

General Examination
A 14" by 17" posterior-anterior chest x-ray
Nasal and skin examination
A Sputum cytology examination
Blood Test
24 Hour urine test for arsenic
Pulmonary Function Text

POWER MASTER, INC.

Environmental Services

March 5, 1987

Employees designated as Health and Safety Officer and Competent Persons for ASAECO Smelter, Tacoma, Washington.

The following is a list of those persons who will be assigned as the Health and Safety Officer and Competent Person during ASARCO Tacoma Smelter Vacuum Service Contracts. One Competent person shall be assigned to each vacuum truck crew.

The following are the persons as described above:

1. Gordon MacPherson
2. Steve Hoffner
3. William MacPherson
4. Jack Jones

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37405 Pacific Hwy. South • Federal Way, WA 98003
Tacoma Federal Way (206) 927-4300 • Seattle, WA (206) 838-7700

Decontamination station officer will be Steve Hoffner.

Respirator fit testing will be conducted by Gordon MacPherson and Steve Hoffner.

APPENDIX G

Tacoma Plant

Provision of Information on Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Powermaster	2-3-87	Arsenic Trioxide

Jack R. Jones — Contractor Signature

C. E. Dungey — Asarco Signature

Steven Hoffman

P. R. Crawford

William MacPherson

K. L. Brown

EMPLOYEE NAME: Arthur Byrd

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Has been trained and understands the care and use of the following respirators:

A. Dual Cartridge Negative Pressure Respirator

B. Power Air Purifier Respirator

C. Type C Supply Air Respirators

II. On the Job Training (Other Sites, This Site)

Trained in the Health Hazards of Arsenic Trioxide in the workplace

Trained in Decontamination Procedures of Equipment and Personnel

III. Hazardous Waste Site Experience (Any Site)

IV. Evaluation of Training and Experience for Work on This Site

Health hazard at site limited to arsenic. Based on past experience and specific information provided to employee, he is qualified to work at site.

EMPLOYEE NAME: Dennis Selby - Powermaster

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Respiratory protection, decon procedures, equipment operation & other on attached sheet.

II. On the Job Training (Other Sites, This Site)

Arsenic and elements of site health and safety plan. Other on attached sheet.

III. Hazardous Waste Site Experience (Any Site)

Has worked periodically at Asarco.

IV. Evaluation of Training and Experience for Work on This Site

Health hazard at site limited to arsenic. Based on past experience and specific info provided to employee, he is qualified for work at the site.

Dennis Selby has been employed by Power Master for 1 year and has the following training:

1. Has been trained and understands the care and use of the following respirators
   A. Dual Cartridge Negative Pressure Respirator
   B. Power Air Purifier Respirator
   C. Type C Supply Air Respirators
2. Trained in the Health Hazards of Arsenic Trioxide in the Workplace
3. Trained in Decontamination Procedures of Equipment and Personnel

EMPLOYEE NAME: William MacPherson - Powermaster

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Resp protection, decon procedures, equipment operation & other on attached sheet.

II. On the Job Training (Other Sites, This Site)

Arsenic & elements of site health & safety plan. other on attached sheet.

III. Hazardous Waste Site Experience (Any Site)

Has worked periodically at Asarco since 1981.

IV. Evaluation of Training and Experience for Work on This Site

Health hazard at site limited to arsenic. Based on past experience & specific info provided to employee, he is qualified to work at site.

William MacPherson has been employed by Power Master since 1981 and has the following training:

1. Has had Respirator Training in:
   A. Dual Cartridge Negative Pressure Respirator
   B. Power Air Purifier Respirator
   C. Type C Supply Air Respirators
2. Has been Trained in How to Work with Arsenic Trioxide and The Health Hazards
3. Has a Medical Examiners Certificate
4. Has been Trained and Certified to Run and Operate a Vacuum Truck
5. Has a Certification of D.O.T. Test for Diesel Power Type A Vehicle
6. Trained in Decontamination Procedures of Equipment and Personnel

EMPLOYEE NAME: Steve Hoffner - Powermaster

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Respiratory protection, first aid, decontamination procedures & equipment operation & other on attached sheet.

II. On the Job Training (Other Sites, This Site)

Arsenic & elements of site health & safety plan, & other as indicated on attached sheet.

III. Hazardous Waste Site Experience (Any Site)

Has worked periodically at Asarco since employed by Powermaster (1984).

IV. Evaluation of Training and Experience for Work on This Site

Health hazard at site limited primarily to arsenic. Based on past experience & specific info provided to employee, he is qualified to work at site.

Steve Hoffner has been employed by Power Master since 1984 and has the following training:

1. Has had Respirator Training in:
   A. Dual Cartridge Negative Pressure Respirator
   B. Power Air Purifier Respirator
   C. Type C Supply Air Respirators
2. Has had American Red Cross Training (Multimedia Standard First Aid)
3. Has a Certification of D.O.T. Test for Diesel Power Type A Vehicle
4. Has a Medical Examiner's Certificate
5. Has been trained in How to Work with Arsenic Trioxide and the Health Hazards
6. Has been Trained and Certified to Run and Operate a Vacuum Truck
7. Acting Safety Captain on Job's Sites he participates in
8. Trained in Decontamination Procedures of Equipment and Personnel

EMPLOYEE NAME: Gordon MacPherson - Powermaster

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Respiratory protection, Certified asbestos worker (30 hrs. wash. state), first aid, other as indicated on attached sheet.

II. On the Job Training (Other Sites, This Site)

Arsenic & elements of Site Health & Safety plan, & other as indicated on attached sheet.

III. Hazardous Waste Site Experience (Any Site)

Has worked periodically at Asarco since first employed for Powermaster (1979)

IV. Evaluation of Training and Experience for Work on This Site

Health hazard at site limited primarily to arsenic. Based on past experience & specific information provided to employee, he is qualified to work at site.

Gordon MacPherson has been employed by Power Master since 1979 and has the following training:

1. Has been trained and understands the care and use of the following respirators to be used on this job:
   A. Dual Cartridge Negative Pressure Respirator
   B. Power Air Purifier Respirator
   C. Type C Supply Air Respirators
2. Trained in the Health Hazards of Arsenic Trioxide in the Workplace
3. Trained and State Certified in Asbestos Abatement
4. Trained and Certified on Ultra High-Pressure Water Systems
5. Has a Medical Examiner's Certificate
6. Has a Certification of D.O.T. Test for Diesel Power Type A Vehicle
7. Has been Trained and Certified to Run and Operate a Vacuum Truck
8. Trained in Decontamination Procedures of Equipment and Personnel
9. Trained in Multimedia Standard First Aid
10. Designated Safety Officer for Federal Way Office
11. Crew Superintendent

ACCIDENT PREVENTION PLAN

Table of Contents

Prepared by: Penser International, Ltd., Olympia, Washington

CONSTRUCTION

ACCIDENT PREVENTION MANUAL

Prepared by: Penser International, Ltd.,
4448 64th Avenue S.E.
Olympia, Washington 98503

Thomas M. Kuchman, P.E., C.S.P.
Engineering and Safety Consultant

Prepared for: Cooney McHugh Co
1124 So. 32nd St.
Tacoma, Washington 98409

May 1983

Penser International ltd.

I. Introduction

This Accident Prevention Plan has been prepared by Penser International Ltd. in consultation with the client company.

The purpose of this manual is to enable this company to achieve compliance with state safety standards and reduce on-the-job injuries with a realistic degree of promptness and effectiveness without affecting company direction, impetus or production policies.

No Accident Prevention Plan can ever circumscribe all facets of human reasoning,compassion or brotherhood nor meet the needs of every employee. Nevertheless, it is the full intention of Penser International Ltd. and the client company to answer as near as possible every prescribed legal and moral need of the company workforce by taking positive steps towards becoming a better employer through accident prevention.

Under no circumstances may any part or portion of this manual be copied, rewritten, transcribed, loaned or used by any other party without expressed permission of the client company and Penser International Ltd.

With this in mind this manual is presented herein.

PENSER INTERNATIONAL LTD.

T.M. Kuchman

Thomas M. Kuchman, P.E., C.S.P.
Engineering & Safety Consultant

COONEY-McHUGH CO.

Statement of Policy

Attention: All Employees

This company recognizes that its employees with their ideas, energy, skills, knowledge and experience are its most valuable asset. Loss of a valuable worker from an on-the-job injury is a loss that affects all, coworkers to family members. For this reason this company must continuously strive for elimination of on-the-job injuries through better accident prevention.

To achieve this goal this company will initiate a comprehensive Accident Prevention Plan that will incorporate these ideals and company policy. Such a plan will define individual responsibilities, Safety Committee role and functions, accident investigation proceedures, safety inspections and specific safety training as dictated by our industry.

The safety of all employees shall be a primary consideration and goal in all company activities. For this reason all management and supervisory personnel will be responsible for developing proper attitudes towards safety and health in themselves and other employees. All employees will be responsible for the success of this Accident Prevention Plan.

It is my full intention to make this company a better place to work through accident prevention.

_____

CONTRACTORS-ERECTORS
1124 SO. 32ND ST. • TACOMA, WA 98409 • TACOMA (206) 472-4404 • SEATTLE (206) 623-5016

Cooney-McHugh, Co.,

Accident Prevention Plan

Assignment of Responsibilities

(1) Safety Committee Chairperson(s):
Gordon Bolen, Bruce Bolen

(2) Accident Investigation:
Gordon Bolen, Bruce Bolen

(3) General Safety Inspections:
Gordon Bolen, Bruce Bolen

(4) Special Safety Inspection:
Shop Personnel

(5) Record Keeping:
Nona Torkelson

(6) Bulletin Board Material:
Job Foreman or Superintendant

(7) New Employee Training/Orientation:
Job Foreman or Superintendant

(8) Special Training:
Job Foreman or Superintendant

(9) Company Representative - WISHA Inspection:
Gordon Bolen, Bruce Bolen

II Safety Committee

In accordance with WAC 296-155-110(5) this Accident Prevention Plan shall incorporate safety meetings consisting of employee and company representative.

The primary purpose of the safety meetings is to analyze and recommend all reasonable methods for preventing on-the-job injuries. To accomplish this all participants are encouraged to discuss recognized hazards, known industrial injuries, near miss injuries, and any other safety related topic during committee meetings. Management will assist by providing additional topics for education purposes.

Safety meetins will be of Foreman-Crew or "tool box" format. Selected individuals(s) for each yard or shop (see Section I Part C) will be responsible for conducting the meetings on a periodic basis. Meetings will be limited to the topics at hand; therefore, responsible individuals should utilize a meeting agenda. Selected individuals will also be responsible for recording meetings discussions, topics, persons present, date, time and any assignments. All such records will be submitted to the appropriate personnel for recordkeeping purposes.

To assist in conducting such meetings within a reasonable time frame it is recommended that the agenda and the chairperson check-list (see Appendix) be used.

III Accident Investigation

The following is a set of guidelines to assist selected personnel in conducting investigations of on-the-job injuries. Such investigations are necessary and paramount to;

(a) employee compensation reports
(b) claims management
(c) insurance rate evaluation, and
(d) elimination of accidents (in accordance with WAC 296-24-045(5)b).

When the company is informed of an industrial injury, a Foreman's Report of Accident is to be filled out in detail by the immediate supervisor, foreman, or lead person of the injured employee. If possible it is recommended that the injured employee participate in completion of the form.

Accident details requiring special attention during the investigation are as follows;

(a) verfication of how the accident happened
(b) identification of witness
(c) the date the injury was reported especially if it is not the same date as it occurred.
(d) evaulation of employee's personnel file to determine any pre-existing conditions related to the injury investigated
(e) whether or not the employee is accident prone
(g) reliability of the employee.

If the company has any reason to believe the injury is not valid or the employee is observed in activities that are not compatiable to the type of injury sustained, additional comments should be made on the back of the Foreman's Report of Accident or on an individual memo.

In the case of a fatality or a serious injury involving more than one employee, notify Penser International, Ltd., and the Department of Labor and Industries, Division of Industrial Safety and Health, within a 24 hour period.

IV Accident Claim Management

This company employes the services of Penser International, Ltd., regarding management of all claims before the State of Washington, Department of Labor and Industries. The following is a procedures outline for completion of the department's accident report.

When an employee reports an injury to a local physician, the physician is responsible for initiating the accident report. After the doctor has entered the pertinent medical facts the accident report is forwarded to the company.

Completion of the accident report involves special attention to the following areas. Employer's mailing address should be: % Penser International, Ltd., 4448 6th Avenue S.E. Olympia, Washington 98503. Be sure to enter the company's firm number and employee's reported class. Enter the employee's last date worked and the date returned to work; if the employee has not returned enter 'has not'. Enter the employee's wage and work week and if the employee is kept on salary or you just pay sick leave. With most cases, do not complete the question as to whether or not you feel it is a valid claim; instead, make sure this question is answered on the Foreman's Report of Accident. Also, if the reported accident is serious (such as an amputation, or fatality etc.,) leave the description of the accident blank and describe it in your best words on a seperate sheet of paper or on the back of the Foreman's Report of Accident (see Section III).

When the accident report is complete according to the above instructions forward the entire white copy and the carbon intact along with the Foreman's Report of Accident to Penser. Penser International, Ltd., will complete the form for you and advise you accordingly. When the accident report and foreman's form are received both are throughly reviewed.

Accurate and complete information is necessary for proper claims management. Each section of the accident report is studied to determine;

(a) type of injury
(b) where it occurred
(c) how it occurred
(d) if the claimant was doing his/her work
(e) when the accident was reported to whom
(f) lasp of time, if any, before seeking medical attention
(g) the doctor's diagnosis and estimated time loss
(h) if there is a pre-existing disease or if the claimant has had a previous injury effecting this claim
(i) the employees feelings relative to the accident
(j) whether or not the company has violated a standard on the Industrial Safety and Health Act.

The Foreman's Report of Accident is studied to determine;

(a) the foreman's viewpoints
(b) exactly how it happened and where
(c) if the employee was injured during horseplay etc.,
(d) if the employee injured himself/herself with intent
(e) witnesses to the accident
(f) statements made by the injured
(g) any discrepancies between injured's report of the accident to the company and to the doctor.

Each month the company will receive a summary log of all claim activities from Penser International, Ltd. <u>The company should insure that the log is read carefully and that all responsible personnel are informed as to various claim activities.</u>

If any additional information relative to a claimant is obtained, notify Penser International, Ltd., by phone or mail. When an employee does return to work please notify us so that we can advise the department to prevent overpayment of time loss. Furthermore, if the company has any reason to believe that a claimant should not be compensated notify Penser International, Ltd., immediately.

Since communication between Penser International, Ltd., the company, and company employees is paramount for proper success of the claims management program it is recommended that all employee's be advised of Penser's services. This can be accomplished by letter (see Appendix) on company letterhead for posting and/or distribution and/or by poster.

V Safety Inspections and Testing

A. Company Inspections.

Selected individuals (see Section I, Part C) will conduct jobsite safety inspections for the purpose of identifying and eliminating unsafe conditions or practices in accordance with WAC 296-155-110(7). Such inspections will be conducted on an informal basis. Any unsafe conditions and unsafe practices of employees will be corrected as soon as possible. Any employees who continues to work in an unsafe manner may be subject for review for appropriate disciplinary action.

In addition to inspections by company personnel this company may retain the services of Penser International, Ltd., Such inspections are designed to identify potential hazards and possible violations of state safety codes. Penser inspections will be conducted on a formal, but unannounced basis.

B. Government Inspections.

Recognizing that compliance with State and Federal Safety Regulations is an intrinsic part of this Accident Prevention Plan this company will do everything reasonably possible to come into compliance with such regulations. Since there may be differences in interpretation of such standards as well as possible misunderstanding of industry practices, this company will initiate the following procedures to reduce the probability of error or misinterpretation before, during and after such inspections.

(1) Prior to an inspection

(a) Correct any known hazards and violations of State and Federal Codes.
(b) Select individuals (in advance) as employer and employee representative. Instruct them as per the following.

(2) When notified of an inspection

(a) Ask the inspector for the reason for his inspection.
(b) If the inspection is other than routine (i.e., accident investigation or compliant) determine the extent of the inspection.
(c) Allow the inspection to occur unless you decide to request a warrant or you are in the process of litigating an appeal of an earlier safety Citation and Notice. (Inspections may be postposed if an employer representative is unavailable . Any refusal of entry or request for a warrant or postponement should be done tactfully, including stating the reasons for such requests).

(3) During the inspection

(a) Stay with the inspector at all time, but give him no information concerning any processes, methods, equipment, etc.,
(b) Take notes of everything the inspector says and does. (To assist in recording specific information a WISHA/OSHA inspection sheet can be found in the Appendix of this manual).
(c) Do not allow the inspector to interfere with any employee at work by attaching a measuring or monitoring device to their persons unless the inspection is conducted pursuant to a valid warrant which specifically authorizes this.

(4) After the inspection

(a) Do not volunteer any information if the inspector wishes to discuss his findings with you.
(b) After the inspector has left, record any additional information such as person interviewed, topics discussed, or items photographed.
(c) When you have received the final typed Citation and Notice post one set for your employees. Mail copes to Penser International, Ltd., or your attorney should you feel any citation is unjust.

C. Special Inspections

As required by specific regulations, this company must conduct periodic inspections or tests on certain field operations and/or equipment.

(1) Special inspections requiring written records that may or may not apply to specific field operations are as follows:

(a) All fire fighting equipment (WAC 296-155-260(1)d).
(b) All field electrical equipment (WAC 296-155-430 (8)c(iii)).
(c) Salamander type heaters (WAC 296-155-280(5)b(v)).
(d) Cranes and derricks (WAC 296-155-525(1)d and (1)e).
(e) Hoists and elevators (WAC 296-144-530(3)r).
(f) Concrete pumping equipment (WAC 296-155-680(4) f(vii)).
(g) General Safety inspections (WAC 296-155-110(8)).

(2) Special testing requiring written records that may or may not apply to specific field operations are as follows:

(a) Non-rated hoisting hooks (WAC 296-155-330(6)b).
(b) Ground fault protection equipment (WAC 296-155-430 (8)c(vii)).
(c) Tower crane installations (WAC 296-155-525(4)f(vi)B).
(d) Personnel hoists (WAC 296-155-530(3)r).
(e) Tunnel air quality (WAC 296-155-730(3)f).

(3) Special inspections not requiring written records (but is recommended by management) may be found in the Appendix. Such inspections do not include those as recommended by ANSI Codes or the manufacture or those required to be performed by professional, licensed engineers.

Individuals selected by the job superintendant or foreman (see Section I, Part C) will be responsible for conducting special inspections and maintaining accurate records of such inspections as required.

VI Discrimination Complaints

Recognizing that the Washington Industrial Safety and Health Act of 1973 contains statues on discrimination against employees exercising rights under the Act, this company will take affirmative steps in assuring that no person shall be discharged or in any matter discriminated against because the employee has filed a complaint, instituted or caused to be instituted any proceeding; and/or has excerised on his own behalf or on behalf of others any right afforded under or related to the WISHA Act.

Safety is and always has been of paramount concern to this company and we encourage all employees to work in a safe manner and voice any safety suggestions or complaints in order to make our facilities into a safer and healthier place to work. In the event that an employee is found to work in an unsafe place, endangering himself or others, management will investigate the situation and determine the course for such behavior. Any behavior that intentionally or maliciously endangers a human life or is contrary to acceptable safety working methods will be subject to review for disciplinary action.

Chapter 296-360 WAC, Discrimination pursuant to RCW 49.17.160 pertaining to regulations on discrimination against employees regarding industrial safety and health is incorporated by reference.

VII Recordkeeping and Posting Requirements

A. Recordkeeping

In accordance with State regulations and the need to monitor the safety activities of this company, the following records will be maintained at our main office:

(1) Foreman's Report of Accident (copy only, see Section III)
(2) State Accident Report (copy only, see Section IV)
(3) OSHA Form 200
(4) Safety meeting minutes (see Section II)
(5) Special safety inspections (see Section V, Part C)
(6) Special training programs (see Section VIII)
(7) Penser summary logs (see Section IV)

Copies of selected records, items (3) through (6) as listed above, shall be maintained at the jobsite, if the job lasts more than one month, has a central jobsite office, and maintains ten(10) or more employees.

Additional records of various safety activities, inspections and tests as outlined in Section V, Parts C(1) and C(2), are to be compiled and maintained by selected individuals for the duration of the projects. After project completion, these records are to be maintained and stored at the main office for a period not less than 5 years.

All records must be accessable at all times for review by a state safety inspector and for use in an evaluation of company safety activities and performance.

B. Posting Requirements

In accordance with WAC 296-155-115 this company is required to post the following articles:

(1) Company Accident Prevention Plan
(2) WISHA Poster "Safety and Health Protection on the job" (LI-416-81)
(3) Industrial Insurance Poster (L1-210-191)
(4) Notice to Report all Injuries Poster (L1-416-80)

(5) Penser Poster (see Section IV)
(6) WISHA Citation and Notices and related correspondence if applicable
(7) Summary portion of OSHA Form 200 (required during the month of February for the prior year).

On jobs of any lengthy duration with more than 10 employees the company is also required to post these articles in addition to the following.

(8) Emergency telephone numbers
(9) Minutes of the last safety meeting
(10) List of personnel trained in first aid

Selected personnel (see Section I, Part C) will be responsible for maintaining and posting of the required material. Other safety posters, correspondence and items of interest may also be posted. A list of current employees with valid state issued 1st aid cards and emergency telephone numbers must be posted at each telephone and 1st aid kit, (see Appendix).

VIII Special Programs

A. Fire Prevention

Typical workplace fire hazards in the construction industry are identified as follows:

(1) Gasoline storage tanks
(2) Oil drum storage drums
(3) Dry goods storage (i.e., lumber, concrete forms, etc.)
(4) Electrical switches.

All jobsites will require the posting of warning signs stating "flammable liquids - no smoking" at gasoline and oil drum storage areas.

All field personnel will be made aware of such hazards and, where necessary, trained in the safe and proper care and storage or handling of such hazards. In the event of a fire the following procedures will be followed:

(a) Use the appropriate fire extinguishers located in company vehicles or trailers to try and contain the fire.
(b) Evacuate all employees from the immediate and adjacent work areas.
(c) Within a structure close all outside and connecting doors.
(d) Turn off equipment power at master electrical switches or control panels.
(e) Try to relocate rolling equipment with propane bottled fuel along with any spare bottles or tanks away from fire.
(f) Contact the local fire department and give them your name, company name, jobsite address and, if possible, the extent of the fire.
(g) Stand by outside to direct and assist the Fire Department in any manner they request.

B. Fire Brigade

Recognizing the need to protect life and property, selected personnel will be required to be knowledgable in the use of portable fire extinguishers. Selection and training of personnel in this area is to be determined by field superintendant.

C. Respiratory Protection

This section is in accordance with WAC 296-155-160, WAC 296-155-220, and WAC 296-62-07109(1) and (2) establishing standard operating procedures for respiratory protection in the event of exposure to toxic fumes or nusance dusts.

Selected personnel (see Section 1, Part C) will be responsible for maintaining this program. All respirators or non-disposal masks shall be periodically inspected according to Section V, Part C of this Plan. All and any employees who may be required to use such respiratory protection in the event of an emergency must be instructed on the following:

(a) Respirator inspection for sealability
(b) Respirator mask fitting
(c) Respirator cleaning and maintenance after use.

The names of individuals trained under this program are to be logged and maintained on the sheet provided (see Appendix).

D. Hearing Conservation

This company administers a hearing conservation program in accordance with WAC 296-62-09015 through WAC 296-62-09053, WAC 296-155-145, and WAC 296-155-210.

All employees exposed to 85 decibels or greater during a full, eight hour workshift come under the jurisdiction of this program. Affected employees will be required to do the following as a condition of employment:

(1) Wear appropriate hearing protection devices.
(2) Observe all signs warning of areas with excessive noise levels.
(3) Undergo audiometric testing, and
(4) Undergo training with regard to the care, inspection and usage of hearing protection devices.

As part of this program this company will utilize all feasable engineering and/or administrative methods to reduce employee noise exposure. Records regarding noise levels and employee audiometric testing will be maintained for a period of not less than five years.

E. Ground Fault Protection

In accordance with WAC 296-155-430(8)c each project will establish a grounding conductor program covering all cord sets, recepticles which are not a part of the permanent wiring of a building or structure, and equipment connected by cord and plug.

As part of this program individuals selected by the project superintendant/foreman shall visual inspect and/or test applicable electrical equipment and record such tests as necessary

IX Employee Training

A. General Training

The following Section is in accordance with WAC 296-155-100(1)c in establishing a training program for all field employees.

Initial employee training in the field will occur immediately after hiring or rehiring. Selected personnel (see Section I Part C) will be responsible for advising each employee about this company's safety policy and rules, fire extinguishers, safety committee members, first aid box location, who to report accident to, and any job technique that would avoid possible injury. Special training for employees is defined under Section VIII of this manual.

A checklist (see Appendix) may be completed and maintained in the employees personnel file. This checklist should be used only during the first hire or training session unless employee transfers to a job requiring additional skills or training.

Employee education and training will continue on a periodic basis as part of the safety committee functions (see Section II)

B. Special Training

As required by state regulations this company must also establish additional training for certain employees working in specific hazardous areas or jobs. Under normal circumstances employees will be trained for a certain trade; therefore, it will not be the company's responsibility to train employers as welder, equipment operators, etc. Those specific duties that do require special training are as follows:

(1) Handling or use of poisons, caustics, or other harmful substances (WAC 296-155-100(2)).
(2) Exposure to harmful plants or animals (WAC 296-155-100(3)).
(3) Handling or use of flammable liquids, gases, or toxic materials (WAC 296-155-100(4)).
(4) Entry into confined spaces (WAC 296-155-100(5)a).
(5) First aid (WAC 296-155-120(1)).

(6) Testing and use of selected personal protective equipment such as, but not limited to:

(a) Respirators (WAC 296-155-220(3)a).
(b) Hearing protection devices
(c) Safety belts and Lanyards

(7) Fire brigades, fire protection equipment (WAC 296-155-260(1)e; WAC 296-155-730(5)Xii for tunnel operations).
(8) Arc welding (WAC 296-155-405(4)).
(9) Compressed air handling (WAC 296-155-745(1)b).
(10) Decompression work (WAC 296-155-745(5)a).

X. Appendix

A. Guide to Foreman-Crew Safety Meetings

B. Field Safety Metting Agenda

C. Foreman's Report of Accident

D. Suggested letter to employees on Workmen's Compensation

E. Penser International, Ltd., Poster

F. WISHA/OSHA Indpection Sheet

G. New Job Safety Report

H. Crane Checklist

I. Sling and Hook Chain Check List

J. Special Training Roster

K. Project 1st Aid Card Holders and Emergency Telephone Numbers

L. Construction Inspection Requirements

M. Construction Recordkeeping Requirements

N. Construction Training Requirements

B. Plant Safety Committee Meeting Agenda

1. Name of Company: _____
2. Location: _____
3. Date of Meeting: _____ 4. Date of Previous Meeting: _____
5. Committee Members Present: _____
6. Committee Members Absent: _____

____ 7. Roll Call

____ 8. Reading of Minutes of Previous Meeting

____ 9. Consideration of Business Held Over from Last Meeting

____10. Report on Progress Made on Previous Recommendations

____11. Reading and Discussion of Plant Inspection Reports

____12. Discussion of Accidents That Have Occurred Since Last Meeting

____13. Recommendations for Prevention of such accidents

____14. Report on Safety Instructions to Employees (Bulletins, Etc.)

____15. New Business and Discussion of Special Safety Projects

____16. Meeting Adjourned

17. Date of Plant Inspectors' Report since Previous Meeting: _____
18. Number of Time Loss Accidents since Last Meeting: _____
19. Number of Minor Accidents since Last Meeting: _____
20. Status of New and Previous Recommendations (use back of page for more space): _____

21. Are Safety Bulletins Conspicuously Posted? _____
22. Other Safety Literature: _____
23. Assignments Made: _____

Penser International, Ltd.

4448 64th Avenue S.E. • Olympia, WA 98503 • Phone (206) 491-2872

FOREMAN'S REPORT OF ACCIDENT

(HOW IT HAPPENED AND WHY)

Each accident should be investigated irrespective of whether the result was serious or minor. The object is to prevent recurrence and it is only through investigation (interview injured person, visit scene of accident if necessary, talk to witnesses) that the causes can be determined and corrected. THIS REPORT IS FOR OUR OWN FILES ONLY.

COMPANY'S NAME

FULL NAME OF INJURED PERSON: AGE DEPT. OR JOB LOCATION

OCCUPATION LENGTH OF SERVICE WITH CO. LENGTH OF SERVICE ON PRESENT JOB DATE INJURED HOUR INJURED A.M. P.M.

WAS WORKMAN IN COURSE OF REGULAR EMPLOYMENT WHEN INJURED? YES ☐ NO ☐ WAS WORKMAN ON A LAUNCHED VESSEL, TUG OR BARGE? YES ☐ NO ☐

WHAT WAS HE DOING WHEN HURT? (Example: Cranking Hoist, Standing on Scaffolding While Laying Brick, etc.)

HOW DID ACCIDENT OCCUR? (Example: Scaffold Gave Way and Injured Fell to Ground, etc.)

WHAT DID INJURED SAY WHEN HE REPORTED ACCIDENT TO YOU?

CAN INJURED RETURN TO WORK ON NEXT REGULAR SHIFT? YES ☐ NO ☐

IF NO, ESTIMATE HOW LONG BEFORE RETURN?

WHO REPORTED ACCIDENT? DATE REPORTED TIME A.M. P.M.

WITNESSES OR CO-WORKERS (Indicate which)

PLEASE ANSWER THE FOLLOWING: CHECK "YES" OR "NO"

1. WAS INJURED MAN PROPERLY INSTRUCTED IN SAFE AND EFFICIENT METHODS? YES ☐ NO ☐
2. DID HE VIOLATE ANY INSTRUCTIONS? YES ☐ NO ☐
3. WAS NECESSARY PROTECTIVE EQUIPMENT WORN? (Example: Goggles, Safety Belt, Hard Hat) YES ☐ NO ☐
4. DID POOR HOUSEKEEPING CONTRIBUTE TO ACCIDENT? YES ☐ NO ☐
5. DID HORSEPLAY CAUSE THE ACCIDENT? YES ☐ NO ☐
6. WAS IT CAUSED BY SOMETHING WHICH NEEDED REPAIRS? YES ☐ NO ☐
7. SHOULD A GUARD BE PROVIDED? YES ☐ NO ☐
8. DID ANY BODILY DEFECT CONTRIBUTE TO ACCIDENT? YES ☐ NO ☐
9. WAS IT CAUSED BY AN UNSAFE ACT? YES ☐ NO ☐
10. DID INJURED STOP WORK? YES ☐ NO ☐
11. DID INJURED RECEIVE FIRST AID? YES ☐ NO ☐
12. DID INJURED REPORT TO FIRST AID IMMEDIATELY? YES ☐ NO ☐
13. WAS MEDICAL CARE NECESSARY? YES ☐ NO ☐
14. DID YOU SEE ACCIDENT? YES ☐ NO ☐

GIVE US YOUR HONEST COMMENTS ON QUESTIONS BELOW. WE ARE NOT TRYING TO BLAME ANYONE. YOUR OPINION MAY HELP US TO PREVENT REPETITION.

WHAT DO YOU CONSIDER THE CAUSE OF THIS ACCIDENT? (Please Do Not Use the Word "Careless.")

WHAT STEPS ARE BEING TAKEN TO PREVENT SIMILAR ACCIDENTS? (Example: Men Are Being Instructed in Correct Lifting and to Get Assistance With Heavy Loads.)

WHAT OTHER STEPS SHOULD BE TAKEN TO PREVENT RECURRENCE? (Example: Mechanical Handling Equipment Should Be Provided for This Work.)

DO YOU FEEL THIS IS A VALID STATE INDUSTRIAL CLAIM? YES ☐ NO ☐ UNCERTAIN ☐ DO YOU DESIRE CONSULTING ASSISTANCE ON THIS OR ANY OTHER SAFETY MATTER? YES ☐ NO ☐

FOREMAN DATE

PLEASE COMPLETE THIS IMMEDIATELY AFTER INJURY AND SEND THE ORIGINAL IN

ABC Company, Inc.
123 Street
Anywhere, U.S.A.

RE: Workmen's Compensation

Dear Employee:

Washington State Law requires that all employee's of this company be covered by Industrial Insurance. Our coverage is with the Department of Labor and Industries. To assist us in the fair and expeditious disposition of claims we have retained the services of Penser International, Ltd.

Penser International is an industrial insurance consulting firm who's purpose is to investigate, monitor and closely evaluate the status of claims we have pending before the Department of Labor and Industries.

Workmen's Compensation has become one of the most costly taxes we now pay and when the industrial insurance provisions of the Workmen's Compensation Act are abused, the costs are always passed on to the employer and employees of the company.

You are entitled to file a claim for any injury and/or illness which occurs on the job or as a direct result of your employment here. We desire that all legitimate claims be handled as provided by law. It is a benefit and you are entitled to it! But you must be aware that sometimes the program is abused. The most common abuses are:

* Claims filed with the Department of Labor and Industries which are not job related.

* Excessive time loss away from the job.

* Disability awarded when none is warranted or greater awards than medically justified.

Through Penser International we will closely monitor all claims and vigorously resist claims for compensation which we feel are not justified.

We must reduce the excessive costs to both the company and you the employee so that the benefits of the program are more quickly responsive to the needs of the true job related injury or illness. We are dedicated to the furtherance of that goal. Please do your part by reducing accidents and injury on the job and filing for benefits only when sustaining a bonafide on the job injury or illness.

Very truly yours,

- - - - -President

ABC Company, Inc.

NOTICE

We have retained the services of PENSER INTERNATIONAL, Ltd, to supervise, investigate and monitor all claims for compensation with the Department of Labor and Industries on behalf of this company.

We will not condone nor tolerate the filing of fraudulant claims or claims for time loss payment beyond a reasonable recuperative period.

Through PENSER INTERNATIONAL, Ltd, we will contest questionable claims and unreasonable compensation awards.

We request your cooperation by not filing a claim for an on the job injury or illness when such injury of illness DID NOT OCCUR on the job or as a result of your employment here. You may further help by not drawing time loss compensation BEYOND YOUR ABILITY TO RETURN TO WORK.

Remember, industrial insurance is a right and privilege both you and the company pay for.

Penser International, Ltd. 4448 - 64th Avenue SE
Olympia, Washington

WISHA/OSHA INSPECTION SHEET

Company Name _____ Date of Inspection _____

Address _____ City _____ Zip _____

Location of Facility Inspected if different than above _____

_____ Telephone number _____

Inspector's Name _____

Did he show identification? Yes ___ No ___ Do not recall _____

What is the reason for the inspection? (Check one)

Special Emphasis ____ Scheduled ____ Accident ____ Complaint ____

Follow-up/Return ____ Other (Specify) _____

Who accompanied inspector during inspection? (name and job title)

1) _____ 4) _____

2) _____ 5) _____

3) _____ 6) _____

Who did the inspector interview? (name and job title)

1) _____ 4) _____

2) _____ 5) _____

3) _____ 6) _____

On the back of this sheet please record: what the inspector said, any possible violations, what corrective actions you are taking and any additional information.

Please Attach or Forward, IMMEDIATELY UPON RECEIPT, a copy of any Citations or warnings to: Penser International Ltd. 4448 64th Ave. S.E. Olympia, Washington 98503.

Date _____ Signed: _____

Employee _____

Date hired _____ 19___

Employed where _____

NEW JOB SAFETY REPORT

GENERAL SAFETY INSTRUCTION

1. Housekeeping
2. Proper reporting of accidents
3. Personal protective equipment
4. Horseplay
5. Use of unsafe equipment (guards not in place)
6. Proper lifting
7. General plant rules have been discussed
8. Plant safety rules
9. Plant smoking rules

_____

SPECIAL JOB SAFETY INSTRUCTIONS

1. Proper use of air hoses
2. Proper use of staple guns
3. Proper use of powered vehicles
   - a. Forklift
   - b. Pick-up
   - c. Company auto
   - d. Truck
4. Special personal protective equipment for this job has been discussed
5. Proper use of hand tools
6. Instructions given in event of fire

I certify that I have received instruction in the items marked above and feel qualified to work safely at my assigned job which is: _____

X. _____ date _____ 19___ employee

X. _____ date _____ 19___

X. _____ leadman

X. _____

X. _____ foreman

X. _____

date _____ 19___

date _____ 19___

We, the leadman and foreman in signing off this new employee (or transferee to new job) certify that he has received the required job instruction for safety and will perform satisfactorily therein.

PLEASE USE THE BACK OF THIS FORM FOR ANY ADDITIONAL COMMENTS

SPECIAL TRAINING ROSTER

Date of Training	Employee's Name	Course Title	Instructor

CRANE CHECK LIST

Date:
Inspected By:

X = Good
R = Repair-Replace
O = Remove

No.	Location	Cable Cond.	Cable Clamp	Brakes	Crane Hooks	Push But'n	Cont Cables	Other	Maintenance Required

SLING & HOOK CHAIN CHECK LIST

X = Good
R = Replace-Repair
O = Remove

Inspected By:

DEP. No.	CHAIN NUMBER	OK	Remove	Replace	Repair	W.O. No.

Accident Prevention Plan
Project
1st Aid Card Holders and
Emergency Telephone Numbers

(1) Current 1st Aid Card Holders:

(2) Emergency Telephone Numbers:

(a) Police:
(b) Fire Dept:
(c) Ambulance:
(d) WISHA:
(e) Penser: (206)491-2872 or (206)491-1478
(f) Hospital:

L. CONSTRUCTION INSPECTIONS REQUIREMENTS

WAC 296-155	AREA
-220(3)b	Respirators
-235(2)	Buoyant Life Saving Device
-260(1)d	Fire Equipment
-330(1)a	Rigging Equipment
-330(7)a(i)	Cable Slings
-360(5)b	Power Activated Tools
-400(6)c	Hoses for Aceteylene, Oxygen, Natural or Mfg. Fuel Gas or/and Combustible Substances.
-400(7)b	Torches
-485(9)g	Wire Ropes for 2 Point Suspension Scaffolds.
-485(11)e	Single Paint Suspension Scaffolds, Hoisting and Rigging,
-525(1)d	Cranes and Derricks
-525(4)y	Tower Cranes
-525(9)g	Mobile Cranes and Excavation Machines
-530(3)u(iii)	Personnel Hoists used in Bridge Tower Construction.
-550(7),(9)	Aerial Cableways

CONSTRUCTION INSPECTION REQUIREMENTS, continued

WAC 296-155	AREA
560(10	Concrete Bucket Tower Hoisting Cables.
565(4),(12)	Hoisting Equipment
570(3)	Wirerope-Rigging
575(4)	Helicopter Cargo Hooks
610(2)n	Motor Vehicles
620(1)h	Pile Driving Equipment
655(12)	Exavations
660(4)	Excavations
660(30)	Excavation-Ramp and Runways
665(13)	Trenches Excavations
680(4)f(vi)	Concrete Pumping Systems
680(5)a(iii)	Vertical Shoring
680(5)a(iv)	Vertical Shoring
690(4)g	Single Post Shoring Timber
715(k)	Rivit Gun Nozzle
730(8)b	Tunnels
730(8)c(iv)	Shafts
730(9)a	Drilling Equipment
730(9)b	Drilling Area
730(11)g	Hoist Ancorage, drilling
765(1)a	Rock Crushing, Ground Washing, and Hot Mix Plants - Receiving Lines, Straps, etc.
775(3)	Demolition Equipment

M. CONSTRUCTION RECORDKEEPING REQUIREMENTS

WAC 296-155	AREA
-110(8)	Safety Activities, such as Inspections and Meetings.
-280(5)c(v)	Salamander Testing
-330(6)b	Non-rated Hook Tests
-430(8)c(vii)	GFP Tests
-525(1)c	Annual Inspecting Hoisting Machines, Crane and Derricks
-525(4)f(vi)B	Tower Crane Installation Tests
-530(3)r	Personnel Hoists - Tests and Inspections
-680(4)f(vii)	Concrete Pumping Equipment
-730(1)f	Employee Access to Tunnels
-730(3)f	Tunnel Air Quality Tests
-745(2)e,f	Medical Examinations of Employees involved with Compressed Air Work
-745(4)a,e	Decompression Records
-775(2)	Demolition Surveys
-855(4)	Explosives Inventory

N. CONSTRUCTION TRAINING REQUIREMENTS

WAC 296-155	AREA
-100(2)	Poison, Caustic , and other Harmful Substances.
-100(3)	Harmful Plants and Animals
-100(4)	Use of Flammable Liquids, Gases, or Toxic Materials
-100(5)a	Confined Spaces
-120(1)	First Aid
-220(3)a	Respirators
-260(1)e	Fire Brigade
-405(4)	Arc Welding
-730(5)xii	Fire prevention - Tunnel Operation
-745(1)b	Compressed Air
-745(5)a	Decompression Training

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Cooney-McHugh (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
Mike Phillips	Cooney-McHugh		3-24-87
Gary Blaine	"		
Bruce Balew	"		
Don McHugh	"		
Dick Phillips	"		

I hereby certify that to the best of my knowledge this list is current for 3/87 (month/year).

W M Richeson
Contractor Site Health and Safety Officer

TACOMA PLANT

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Cooney-McHugh	3/24/87	Arsenic Trioxide

W H Kuhnen
Contractor Signature

Curtis E Dungey
ASARCO Signature

DONALD B. MURPHY
DBM
CONTRACTORS, INC.

1220 So. 356th • Box 6139 • Federal Way, WA 98063-6139
Tacoma (206) 927-8510 Seattle (206) 624-0234

March 9, 1987

Asarco, Inc.
Engineering Dept.
Tacoma Plant
P.O. Box 1677
Tacoma, WA 98401

In response to your request the following information is provided.

1. Key personnel on jobsite - Bruce Bolen, designated as Health & Safety Officer.

2. Special training - Bruce Bolen has had First-Aid training and all employees have been trained in Respirator Care and use.

3. The company Decontamination Officer is Bruce Bolen. He will make sure that employees wash their boots, go into air boots and take showers daily.

4. The respiration fit testing is done by Bill Richeson, company Safety Director. Mr. Richeson has had extensive Industrial Hygiene training from the State of Washington.

5. Employees on job site:
   Don McHugh
   Mike Phillips
   Dick Phillips
   Bruce Bolen
   Gary Blane

   They started on the project February 9, 1987.

6. There is a First-Aid kit, a fire extinguisher and eye wash station in our foreman's pickup on site.

Sincerely,

DONALD B. MURPHY CONTRACTORS, INC.

Bill Richeson

Bill Richeson
Safety Director

BR:bb

EMPLOYEE NAME: Don McHugh

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First Aid
Hazard Communications (Right to Know)
Respirator care & Use
Personal Protective Equipment (Arsenic & Chlorine)
Fall Protection
Crane & Rigging Safety

II. On the Job Training (Other Sites, This Site)

Asarco - Misc. Work in Arsenic Plant 400 hrs
Occidental Chemical - Chlorine Storage Area 80 hrs
Reichhold Chemical - 12 hrs.

III. Hazardous Waste Site Experience (Any Site)

Vashon Island-Mike Site - Asbestos Removal
Asarco - Arsenic
Reichhold Chemical - Asbestos
Occidental Chemical - Chlorine Gas

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at site limited to arsenic. Specific info regarding arsenic and site health & safety plan have been reviewed. Based on specific nature of the hazard, and previous work experience, this worker qualified for the job.

EMPLOYEE NAME: Bruce Boren.

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

FIRST-AID TRAINING
HAZARD COMMUNICATIONS TRAINING (RIGHT TO KNOW)
RESPIRATOR CARE & USE
PERSONAL PROTECTIVE EQUIPMENT (ARSENIC & CHLORENE)
FALL PROTECTION
CRANE & RIGGING SAFETY

II. On the Job Training (Other Sites, This Site)

OCCIDENTAL CHEMICAL CORP. - Chlorine Storage Area 80 hrs.
ASARCO - Misc. work in Arsenic plant - 500 hrs.
Arsenic training & elements of site health & safety plan

III. Hazardous Waste Site Experience (Any Site)

VASHON ISLAND - NIKE SITE - ASBESTOS REMOVAL
ASARCO - ARSENIC
OCCIDENTAL CHEMICAL - CHLORINE GAS

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at site limited to arsenic. Specific info regarding arsenic and health & safety plan have been reviewed. Based on specific nature of the hazard, and previous work experience, this worker qualified for the job.

EMPLOYEE NAME: GARY BLAINE

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

FIRST AID
HAZARD COMMUNICATIONS (RIGHT TO KNOW)
RESPIRATOR CARE & USE
PERSONAL PROTECTIVE EQUIPMENT (ARSENIC & CHLORINE)
FALL PROTECTION
CRANE & RIGGING SAFETY

II. On the Job Training (Other Sites, This Site)

ASARCO - Misc. Work in Arsenic plant. 300 hrs.
arsenic training & elements of site health & safety plan

III. Hazardous Waste Site Experience (Any Site)

ASARCO - Arsenic

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at site limited to arsenic. Specific info regarding arsenic and health & safety plan have been reviewed. Based on specific nature of the hazard, and previous work experience, this worker qualified for the job.

EMPLOYEE NAME: Mike Phillips

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)
First Aid
Hazard Communications
Respirator care and use
Personal Protective Equipment (Arsenic)
Fall Protection
Crane & Rigging Safety

II. On the Job Training (Other Sites, This Site)
Occidental Chemical Corp. - 16 hrs
ASARCO - Misc. Work in Arsenic Plant 450 hrs
Vashon Island - Nike Site Demolition - Asbestos Removal - 80 hrs

III. Hazardous Waste Site Experience (Any Site)
Occidental Chemical - Chlorine Gas
ASARCO - Arsenic
Vashon Island - Asbestos

IV. Evaluation of Training and Experience for Work on This Site
Health hazards at site limited to arsenic. Specific info regarding arsenic and health & safety plan have been reviewed. Based on specific nature of the hazard, and previous work experience, this worker qualified for job.

EMPLOYEE NAME: Dick Phillips

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

First Aid
Respirator Care and Use
Personal protective Equipment (Arsenic & Asbestos)
Fall Protection
Crane & Rigging Safety

II. On the Job Training (Other Sites, This Site)

ASARCO - Misc. Work in Arsenic Plant 500 hrs
Vashon Island - Nike Site - Asbestos Removal - 80 hrs

III. Hazardous Waste Site Experience (Any Site)

ASARCO - Arsenic
Vashon Island - Asbestos

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at site limited to arsenic. Specific info regarding arsenic and health & safety plan have been reviewed. Based on the specific nature of the hazard and previous work experience, this employee is qualified for the job.

SAMPLE
HEALTH AND SAFETY PLAN
CONSENT FORM
FOR
ASARCO TACOMA SMELTER SITE STABILIZATION PLAN

I have read the Health and Safety Plan pertaining to the work to be performed by Mountain Construction INC. (insert name of Contractor firm) for activities related to the ASARCO-Tacoma Smelter Site Stabilization Plan.

I understand the contents of this Health and Safety Plan and agree to abide by its provisions. Any questions I had regarding the plan have been satisfactorily answered.

Name	Company/Agency	Address	Date
Dennis E Dickinson	MT CONSTRUCTION	(b) (6)	3-25-87
Troy Schuaz	MT Construction		3-25-87

I hereby certify that to the best of my knowledge this list is current for MARCH 1987 (month/year).

Dennis E Dickinson
Contractor Site Health and Safety Officer

TACOMA PLANT

Provision of Information on
Hazardous Chemicals to Contractors

The following contractor(s) was provided with information on hazardous chemicals to which its employees may be exposed in the course of work at the plant site. Information included the identity of hazardous chemicals at the site and protective measures employees should follow to reduce the possibility of exposure.

Contractor	Date	Hazardous Chemicals
Mountain Construction	3/25/87	Arsenic Trioxide
Contractor Signature		ASARCO Signature

EMPLOYEE NAME: Dennis Dickinson - Mountain Construction

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Firefighting for 14 yrs. - including respirator training
Four courses through Washington Firefighters' Assoc. in service training on hazardous materials
Certified emergency medical technician

II. On the Job Training (Other Sites, This Site)

In service training at Phillips Petroleum & Allied Chemical - H_2SO_4, HCl, SO_2, ammonia
Arsenic hazard training & elements of site health & safety plan

III. Hazardous Waste Site Experience (Any Site)

Worked at Asarco site periodically for 5 yrs.

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic. Specific info regarding arsenic and elements of site health & safety plan have been reviewed with employee. Based on the specific nature of hazard, this worker is qualified for the job.

EMPLOYEE NAME: Tracy Schwanz - Mountain Construction

TRAINING DOCUMENTATION AND REQUIREMENTS

The OSHA Interim Final Standard to Protect Workers in Hazardous Waste Operations (29 CFR 1910.120) sets forth certain training requirements for workers at hazardous waste sites. Training includes elements of the health and safety plan for the site, health and safety hazards, use of personal protective equipment, work practices, and medical surveillance requirements. The standard also states that workers shall have a minimum of 40 hours training prior to job assignment, and three days of actual field experience. However, the standard also states that employers who can show by an employee's work experience (including on-site experience) that he has had training equivalent to the above, the initial training requirements shall be satisfied. Below is an attempt to reconcile training required by the standard with training necessary for the Asarco SSP demolition activities.

I. Training Completed to Date (Off-Site)

Respirator training
Safety programs

II. On the Job Training (Other Sites, This Site)

Arsenic hazard training & elements of site health & safety plan

III. Hazardous Waste Site Experience (Any Site)

IV. Evaluation of Training and Experience for Work on This Site

Health hazards at this site limited to arsenic. Specific info regarding arsenic & site health & safety plan have been reviewed. Based on specific nature of hazard, worker qualified for work on the site.

Mountain Construction

March 6, 1987

ASARCO, Inc.
Attn: Curtis Dungey
Post Office Box 1677
Tacoma, Washington 98401

Re: Health and Safety Requirements

1. Description of Work -
   General Maintenance work as directed by plant engineer.

2. List of Key Personnel -
   Dennis Dickinson - Foreman
   - Health and Safety Officer
   - Decontamination officer
   - Respirator fit testing
   - First Aid Training

3. Other Employees -
   Sam Ladd - Laborer
   - First Aid Training
   Doug Nelson - Laborer

4. Safety Equipment -
   Fist Aid Cabinet with Eye Wash
   Fire Extinguisher

5. Health and Safety Procedures -
   All employees are required to wear: Long underwear, coveralls, workboots, safety glasses and to have a respirator on when necessary. At the end of each work day the employee showers on site and there are clean underwear and coveralls available. All clothing is washed on site. Respirators are cleaned and refitted with new filters on site. Any injuries are reported to the plant engineer and main office immediately.

3009 N. McCarver • Tacoma, Washington 98403 • 206 572-3329